LISBON SCHOOL OF ECONOMICS & MANAGEMENT
UNIVERSIDADE DE LISBOA

MASTER OF SCIENCE IN FINANCE

MASTERS FINAL WORK PROJECT

EQUITY RESEARCH:
HEINEKEN N.V.

SÉRGIO MIGUEL DOS SANTOS CRISPIM

SUPERVISOR:
PROFESSOR PEDRO RINO VIEIRA

OCTOBER 2018

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Abstract

The elaborated work consists on an Equity Research of Heineken N.V. for the year ending 2018F, based on assumptions that I consider to be viable for the next five years and based on the historical performance of the last five years. The decision to evaluate a company such as Heineken N.V. came for personal relish, not only by the company and all that it represents in terms of influences, but also combined with an interest to know more about the industry in which it is inserted.

To do this, the entire study is done through the CFA Institute format and begins with the company description, which contains a summary of its history to date, focused on the main acquisitions occurring, the explanation of which operating segments (in the case of Heineken NV the operational segments are assumed to be regional), an enumeration and detail of the main drivers of revenue, profitability and costs, the strategy defined by the management of the company for the coming years and also how the company is organized at the level of shareholders structure, as well as its corporate governance.

The next phase introduces some of the study of the global economy, and centers on the trends and growth (by region and global) of the industry forecast for the next years. This phase concludes with an analysis of the competitive environment in which Heineken N.V. is inserted, and where it is the second largest competitor in terms of revenue.

After the analytical study, the assumptions are elaborated for the next five years, as already mentioned, and the evaluation models applied. The main model applied is Discounted Cash Flow, which discounts to the present, at the discount rate considered and calculated by me, all future cash flows generated, including the cash flow value generated for perpetuity. Through this model the recommendation given to investors is to hold/maintain the shares, since the suggested price for the end of 2018FY is € 91.55 / share, bearing in mind that Heineken N.V. is a low risk company. This valuation is supported by the complementary Adjusted Present Value and Free Cash Flow to Equity methods, for which I obtained the price per share of respectively € 90.48/share and € 88.82/share. The evaluation by the Dividend Discount Model and Multiples method was also elaborated, although with inconclusive results, and skewed in the case of the relative valuation.

For this recommendation, I consider that the main risks meet the expected risk-free rate of return for perpetuity and perpetual growth rate. Being data with immense dependent variables, they become impossible to predict with certainties. In order to assess these risks and other risks considered, sensitivity analyzes are elaborated to determine the impact they may have on the recommendation.

Resumo

O trabalho elaborado consiste numa avaliação do preço por ação da Heineken N.V. para o final de 2018FY, tendo por base pressupostos que considero futuramente viáveis para os próximos cinco anos de atividade e que se apoiam no histórico de performance dos últimos cinco anos. A decisão de avaliar uma empresa como a Heineken N.V. adveio por gosto pessoal, não só da empresa e tudo o que esta representa ao nível de influências, aliado a um interesse de conhecer mais sobre a indústria na qual esta se insere.

Para tal, todo o estudo é feito através do formato CFA Institute e tem como início a descrição da empresa, a qual contém um resumo da sua história até à data, focado nas principais aquisições ocorrentes, a explicação de quais os segmentos operacionais (no caso da Heineken N.V. os segmentos operacionais são assumidos como regionais), uma enumeração e detalhe dos principais elementos condutores de receitas, rentabilidade e custos, a estratégia definida pela direção da empresa para os próximos anos e também de que forma a empresa está organizada ao nível da estrutura de detenção de ações, bem como a organização administrativa interna.

A fase seguinte introduz um pouco do estudo da economia global, e centraliza-se nas tendências e crescimento (por região e global) da indústria previsto para próximos anos. Esta fase termina com uma análise do meio competitivo no qual se insere a Heineken N.V., e onde é o segundo maior competidor em termos de receitas.

Após o estudo analítico, os pressupostos são elaborados para os próximos cinco anos, como já foi referido, e os modelos de avaliação aplicados. O principal modelo aplicado é o Discounted Cash Flow, o qual atualiza para o presente, à taxa de desconto considerada e calculada por mim, todos os cash flows gerados futuros, onde se incluí o valor de cash flow gerado para a perpetuidade. Através deste modelo a recomendação dada aos investidores é de manter as ações, já que o preço sugerido para o fim de 2018FY é €91,55/ação, tendo em conta que a Heineken N.V. é uma empresa de baixo risco. Esta avaliação é suportada pelos métodos complementares Adjusted Present Value e Free Cash Flow to Equity, pelos quais obtive o preço por ação de, respetivamente, €90,48/ação e €88,82/ação. A avaliação pelos métodos Dividend Discount Model e método dos Múltiplos também foi elaborada, embora com resultados inconclusivos, e enviesados no caso da avaliação relativa.

Para esta recomendação, considero que os principais riscos vão ao encontro da taxa de retorno sem risco prevista para a perpetuidade e para a taxa de crescimento perpétua. Sendo dados com imensas variáveis dependentes, tornam-se impossíveis de prever com certezas. Para avaliar estes riscos, e outros riscos considerados, estão elaboradas análises de sensibilidade para se perceber qual o impacto que os mesmos podem ter na recomendação.

Acknowledgements

This space will be used to thank all those who directly or indirectly helped me complete the final master's thesis and all those who supported me throughout my academic journey.

A first mention of gratefulness to my tutor, Professor Pedro Rino Vieira, for helping me throughout the preparation of this work. To all the teachers who accompanied me along the master course, thank you.

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To Andreia Gaudêncio, for all the good moments that we spent together, and for all the support that she gave me and continue to give me, thank you very much.

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Finally, the biggest thank you goes to the two most important people: my parents, Ana Maria Marques dos Santos and José Crispim Vieira. Without your effort to give me everything I needed, this walk would not have been possible. Thank you very, very much.

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Heineken N.V.

Hold

Low risk

29 October 2018

Portugal

HEIA: Entering in new markets

(YE2018 Price Target of €91,55 (+5,3%); recommendation is to hold)

1. Research Snapshot

HOLD is my recommendation for Heineken N.V. (HEIA) with a 2018YE price target of €91,55/sh using the discounted cash flow method, implying an upside potential of 5,3% from the December 31 closing price of €86,93/sh, with low-risk. It a very competitive market, where the main regional segment, Europe, is highly consolidated. The company performed strong investments over the last years on emergent markets like Americas, Asia Pacific and Africa, and on the cider industry, where is market share´ leader. Adjusted Present Value and Free Cash Flow to the Firm support my view that HEIA is undervalued.

Figure 1: Historical Share Price

+5,3% upside €91,55

Europe is currently the group´s main region in terms of revenues: by itself, it comprised 46,6% of total revenues in 2017, following a declining trend verified from 2014, given that since this year the region lost 4,1% share to other regions. This is happening, not due to decreasing consolidated beer volumes, but due to decreasing volume´s growth percentage. In fact, from 2015 to 2017, the volumes only increase 2,9%, being expected a growth rate of 3,5% from 2018 to 2022.

Beer industry is becoming very consolidated: in fact, in Europe there is short space to sharp group´s volumes the level of profit is declining, and competition is continually becoming more aggressive. To gain market share, in order to approach the leader AB InBev and solidify the second position, HEINEKEN intends to make considerable investments, especially on Asia Pacific, as well as improve previous investments on Americas.

Cider: HEINEKEN is market share´s leader on cider industry. The company seeks to consolidate this position, taking advantage of new market trends, which are in line with alternative drinks that can substitute the consumption of beer.

Table 1: Author´s risk assessment

Low	Medium	High

My personal assessment estimates a low risk for HEIA

Source: Personal analysis

2. Business Description

Heineken N.V. (HEINEKEN) is a Dutch brewing company headquartered in Amsterdam. In terms of revenues, the Group is nowadays the number one brewer in Europe, and the second worldwide, only behind AB InBev. Having operations in more than 70 markets, HEINEKEN is the world´s most international brewer. In its portfolio there are over 300 brands, including international, regional, local and specialty beers and ciders, being Heineken® their global leading brand.

Brief history

Back in 1864, Gerard Adriaan Heineken bought Haystack, a small brewery located in the center of Amsterdam.

In 1873, Heineken opened a new brewery in Rotterdam: "Heineken's Bierbrouwerij Maatschappij NV" (HBM), and in 1874, a second one, guaranteeing the necessary conditions to start the exportations in 1876, to France.

In 1914, Gerard´s son, Henry Heineken took control of the company, completing the first acquisition of a foreign brand in 1927, by acquiring "The Brasserie Leopold" in Brussels. 30´s decade was defined by the entrances on the Asian market and on American market, where HBM were the first foreign imported beer.

In 1968, HBM bought Amstel, Holland´s second largest brewery, getting close to 60% market share in the national market.

In 1972, Alfred Heineken changed the company´s name to Heineken N.V., one year after took control. The next decades were characterized by the international expansion. First in Europe, the acquisition of both Brasserie de l'Espérance and Italian Dreher group gave HEINEKEN a strong position on the European market. Due to that, HEINEKEN had to renew their facilities, to respond to increasing demand, closing the old brewery in Rotterdam and opening a new one in Zoeterwoude, starting like this their tradition of environmentally sustainable brewing.

Since the 80's until now, HEINEKEN completed a significant amount of acquisitions and investments in new facilities, supporting its consolidation process, in which stands out the acquisition of Spanish brewery Cruzcampo, in 2000, and Brau-Beteiligungs AG (the Austrian market leader at the time). The Western market becomes strong in 2008 with the acquisition of Scottish & Newcastle, in a partnership with Carlsberg. In 2010, HEINEKEN took over FEMSA ((Fomento Económico Mexicano, S.A.B.), which was the second largest brewery in one of the most profitable markets in the world, and in 2012 the company increase its share part in Asia Pacific Breweries.

Operational segments/regions

Since HEINEKEN is present in many countries, producing and/or selling numerous and different products in each one, the segment division adopted throughout this equity research is the same as the company.

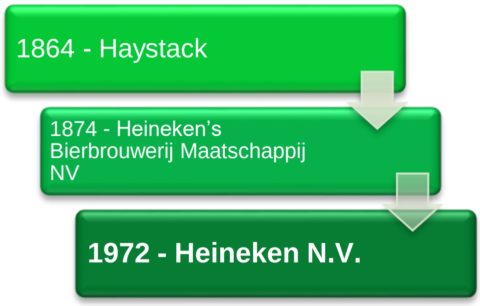
HEINEKEN divides its business into five operating segments: Europe; Americas; Africa, Middle East & Eastern Europe; Asia Pacific; Head Office and Other/eliminations.

The first four segments listed above are HEINEKEN´s business regions, and each one of them has its own Regional President. The fifth is a segment that is directly linked to the responsibility of the Executive Board.

<u>Europe:</u> This segment has as key brands Heineken®, Cruzcampo, Birra Moretti, Żywiec and Strongbow.

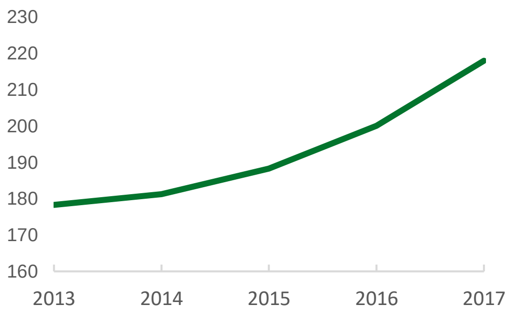
Given that it is the region where HEINEKEN started their operations, it has indicators that show that this area is the one that generates more revenues to the company, with a percentage of 45.4 of its total. In terms of consolidated beer volume, 78.8mhl was the value registered in the last year, representing a slight increase compared to the previous year 2016. Although, in terms of its total operations worldwide, it has shown

<u>Figure 2: Changes on company´s name</u>



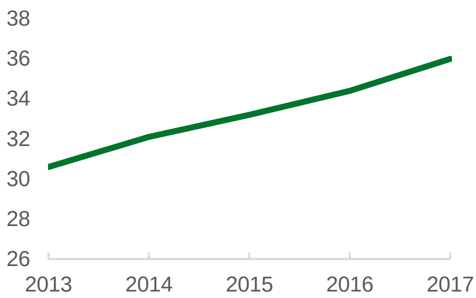
Source: Heineken Collection Foundation

<u>Figure 3: Consolidated beer volume (in millions of hectoliters)</u>



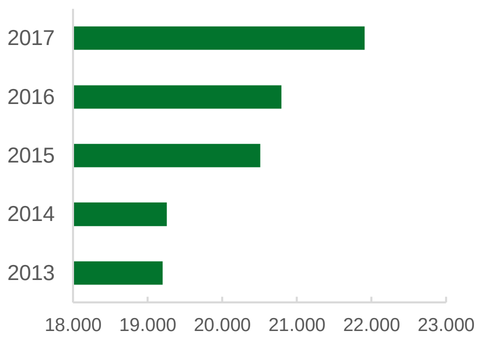
Source: Heineken N.V. Annual Report 2017

<u>Figure 4: Heineken®´s volume (in millions of hectoliters)</u>



Source: Heineken N.V. Annual Report 2017

<u>Figure 5: Revenues (in millions of €)</u>



Source: Heineken N.V. Annual Report 2017

a decrease from 39.3% to 36.1%. These figures translate into a nominal value of revenues of €10,237m, with an operating profit, and margin, before exceptional items and amortization of acquisition-related intangible assets (beia) of €1,371m and 35.1%, respectively, with the last indicator denoting a decrease of 0.1% compare to 2016. The main brand, Heineken® volume continue to increase on this area, up to 13.8mhl.

Americas: The Americas continue to be a segment with good growth margins, especially due to the performance of its main brands, like Heineken®, Tecate Light, Schin, Dos Equis and Lagunitas.

In 2017 the region delivered strong results in Mexico, Brazil and Haiti, where it has expanded their volumes, revenues and profits. On the other hand, the US beer market does not perform so well, with the sales of Heineken® Light partially offsetting the declines of Heineken® lager.

These scenarios result in a percentage of 27.8 of revenues (beia), as the company´s total. To reach a significant increase in revenues related to 2016, which went from €5,203 to €6,258m, the firm had to increase in 22.8% their consolidated beer volume, up to 72.1mhl. Due to that, this region represented 33.1% of consolidated beer volume on the firm´s total. Also, the main brand, Heineken®, increase its volume over 9.1% in 2017, from 9.8mhl to 10.7mhl. In terms of operating profit, the Americas in 2017 were the segment that better perform compared to the previous year, with an increase of 16.4%, reaching €1,188m. As a percentage of the HEINEKEN´s total, the Americas represented 30.4% of the operating profit (beia).

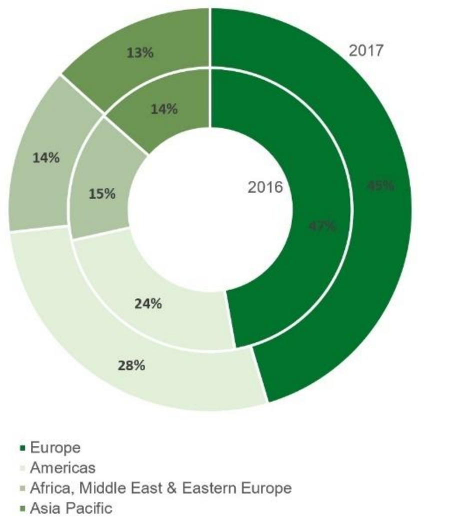
Africa, Middle East & Eastern Europe: This segment is the one that faces more macroeconomic challenges, like the rising inflation and currency pressure specially in countries like Nigeria and Egypt. However, driven by its key brands like Heineken®, Primus, Amstel, Walia and Ivoire, 2017 was the year in which this region marked the return to positive volume growth. Ethiopia, South Africa and Russia exhibited the solidest growth in the segment.

Although with shorter difference, the region continues to be the third that provide better revenues (beia) to HEINEKEN, with 13.6% of its total. The Heineken® brand continue to grow in terms of volume, to 5.2mhl, contributing to the increase of consolidated beer volume, which went from 38.4mhl to 40.1mhl in 2017. Concerning the total of the firm, the segment decreases its contribution to 18.4%. Despite the decrease of the region´s shown by its operating profit (beia), which grows 3.2%, up to €388m. Besides this increase, this segment continues to be the one with shorter impact on total operating profit (beia), with a contribution of only 9.9% of HEINEKEN´s total.

Asia Pacific: Supported by its vital brands Heineken®, Tiger, Anchor, Larue and Bintang, the region continues to improve its volumes, revenues and profit. To enhance this, Vietnam and Cambodia were the countries that better perform during 2017. Tiger brand continues to evolve, reaching 11.5mhl sales, more than the star brand Heineken®, which volume decreases from 6.6mhl to 6.3mhl in the past year.

The contribution for the total revenues (beia), of this segment was the lowest of the four regional segments, with 13,3%, although the improvements on other indicators. Concerning the production capacity, it has grown 10,7%, featuring 27mhl in the region, and representing 12,4% of HEINEKEN´s total. The growth on the nominal value of revenues (beia), up to €2.996m, also resulted in an operating profit (beia) increase, from €927m to €962, meaning that this is the firm´s region with highest efficiency on its production/selling areas. The previous value is translated on 24,6% contribution to the total operating profit (beia) of the firm, nevertheless recording a decrease of 0,8% comparing to 2016, in which the region was able to proportionate 25,8% of HEINEKEN´s total operating profit.

Figure 6: Revenue by Region (in percentage of total)

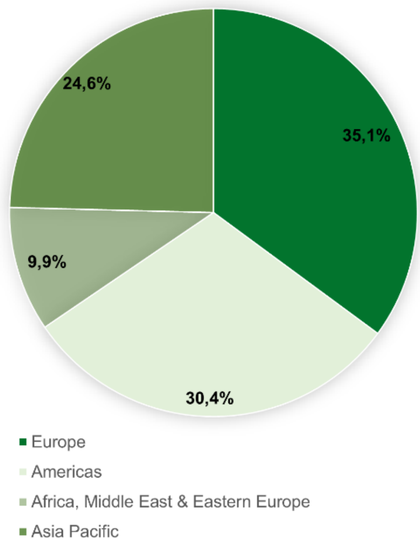


Source: Heineken N.V. Annual Report 2017

Figure 7: Percentage of Operating Profit by region

Source: Heineken N.V. Annual Report 2017

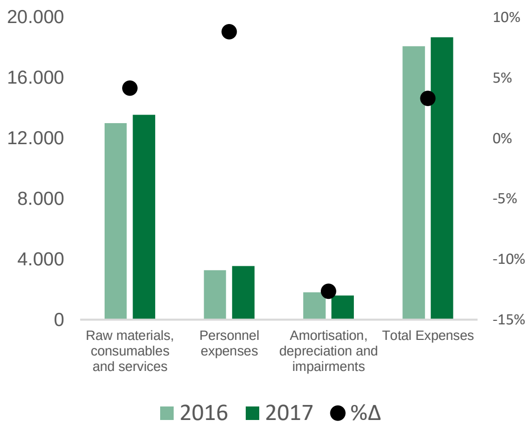
Figure 8: Operating Profit by region (in percentage of total)



Source: Heineken N.V. Annual Report 2017

Head Office and Other/eliminations: Concerning this segment, the results available refers to negative revenues (beia) of €641m, and an operating profit (beia) also negative of €150m. Comparing to 2016, there has been a slight decrease in the revenues (beia), up to €20m, which results on a notable change on operating profit (beia), decreasing 233%.

Figure 9: Expenses (in millions of €)



Source: Heineken N.V. Annual Report 2017

Key drivers of profitability (revenues/expenses)

In the beginning of 2017, HEINEKEN replaced EBIT for operating profit (beia) as their key driver of profitability. Company´s management took this decision because operating profit better translates the profitability that is directly controlled by HEINEKEN. Although both operating profit and operating profit (beia) are not measure in accordance to IFRS, management use them to evaluate de segment´s performance.

In 2017 HEINEKEN continued to improve their organic operating profit (beia) by 9.3%, excluding €188m of negative currency impact, and €80m from consolidated changes, reducing the rhythm from the first half of the year (11.7%) mainly due to the increase of commercial investments. Total operating profit (beia) growth was 6.2%, reporting an absolute value of €3,759m. The company had increase their operating profit (beia) margin to 17.2%, reflecting higher revenues and cost efficiencies.

Which concerns to the company´s revenues (beia), there were an organic increase of 5%, from €20,792m in 2016, to €21,908m in 2017, also related to the growth of 2.9% on total consolidated volume, which as an impact on revenue (beia) per hectoliter of positives 2.1%. On the other hand, currency developments had a negative effect of €817m, essentially due to the British pound, Nigerian Naira, the Congolese Franc, the Mexican Peso and the Egyptian Pound. Consolidated changes impacted the firm´s profitability in €891m.

To leverage the increase on revenues, Heineken® volume grew 4.5%, benefiting from good marketing strategies with global platforms like UEFA Champions League and Formula 1®. Heineken® Light continued to grow, compensating the lower volume in the US with the launching on Mexico, Indonesia, Poland, Greece and Switzerland.

Heineken® 0.0 is exceeding expectations in the sixteen markets where it is present. Other strong brand like Tiger, Krušovice and Birra Moretti volume growth was higher than 10%. Tecate, Red Stripe and Red Stripe´s volumes also grow. Amstel volume, despite of the growth in Brazil, was flat due to the decline in Nigeria and Greece. The brand Sol suffered a decrease on domestic market, which results on the decline of its volume, with the robust growth in Mexico not being enough.

Cider markets continued stable, registering a slight increase on its volume, mainly due to the strategy outside UK, where volumes decline due to a partial delisting. Low & No-Alcohol (LNA) also registered a slight growth, with Radler and Heineken® 0.0 brands leveraging the company on Europe but suffering a volume´s decrease on Nigeria and Egypt due to macroeconomic conditions and consumer behaviors.

Craft & Variety volume increase on both international craft beers and local craft proportions.

From the total expenses (beia) side, the nominal value had increase to €18,149m, growing 4.1% on an organic basis. Marketing and selling (beia) expenses, although it had registered an increase in 2017 to €2,888m, its share on total expenses decrease from 13.6% to 13.2%. The inputs costs also recorded an organic increase of 4.7% and on a consolidated level, raw materials ascended to €1,817m mainly due to adverse currency movements, which had an impact at a transactional level. In line with raw materials and marketing and selling expenses, the non-returnable packaging represented a considerable amount (17.9%) on total expenses in 2017, increasing when compared to 2016 (related to increase on revenues). With a shorter impact compared to 2016, amortization, depreciation and impairments decreased 14.5%, to €1,587m.

Table 2: Raw materials (in percentage of total)

Type of Cost	% of total
Non-returnable packaging	24,8%
Marketing and selling expenses	21,5%
Raw materials	13,4%
Goods for resale	11,8%
Transport expenses	8,9%
Energy and water	3,8%
Repair and maintenance	3,8%
Inventory movements	-1,0%
Other expenses	13,1%

Source: Heineken N.V. Annual Report 2017

Company strategies

HEINEKEN´s strategy relies on four main priorities. The company aims to gain market share, while focus on long-term sustainability, continued growth and shareholder value.

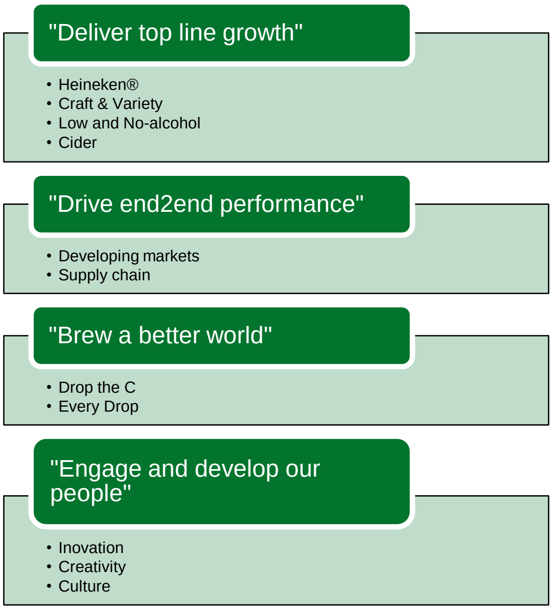
"Deliver top line growth": HEINEKEN is focused on being the number one player on beer and cider markets worldwide and to leverage their main brand Heineken®. Besides, the company intends to gain additional costumers and to reach more houses by leading the craft & variety, low- and no-alcohol and cider markets. To do so, the company expanded cider portfolio to more than fifty markets and launched a new craft & variety online business channel for consumers, the "Beerwulf".

"Drive end2end performance": The purpose is to leverage future growth and increase company´s margins and efficiency. To do so, HEINEKEN is optimizing processes and eliminating duplication costs that add no value by improving their capital expenditures and working capital. One driver of this strategy is to invest on developing markets. The company plans to keep developing their BASE program and to deploy it on Asia Pacific, Africa, Middle East & Eastern Europe and Caribbean, becoming more efficient by homogenizing core business processes. Another way to drive this strategy is throughout procurement, since the firm is reducing their strategic suppliers, permitting a reduction of base costs and increasing cash benefits. Besides, HEINEKEN will continue to improve their Heineken Product Implementation (NPI) in order to introduce new products faster and efficiently in the markets.

"Brew a Better World": HEINEKEN continues to focus their grow in a sustainable base. The company has already started implementing the program "Drop the C´", which focuses on reducing carbon emissions, and will start the "Every Drop" program, focused on water. Besides, there as social campaigns taking place at internally and externally.

"Engage and develop our people": The company will continue to improve their people and culture. Diversity is viewed as the driver of innovation, creativity and business success, and there is already a program of "Inclusion & Diversity" in progress and a new internal digital engagement platform, workplace by Facebook.

Figure 10: Strategies



Source: Heineken N.V. Annual Report 2017

3. Management and Corporate Governance

Shareholder structure

Heineken N.V. is 50.005% controlled by Heineken Holding N.V., 8.632% by FEMSA through its affiliate CB Equity and 41,363% by public shareholders, in which includes shares held in Treasury.

Heineken Holding N.V. was created in 1952 with the purpose of guarantee the continuity, independence and stability of HEINEKEN. The ownership of Heineken Holding N.V. is made by L'Arche Green N.V., with 52.599% shares, in which 88.86% are controlled by the Heineken Family and 11.14% by the Hoyer Family. 31.139% are possessed by public shareholders, being the remaining 12.262% shares hold by FEMSA, in a partnership with Heineken N.V., representing 14.76% of the economic interests of Heineken Group.

Management and Corporate Governance

HEINEKEN´s management and supervisory structure is ordered under a two-tier system, of which the Executive Board and the Supervisory Board are part, and independent of each one. Both are accountable on the Annual General Meeting (AGM). It is mandatory for the company to fulfill the Dutch Corporate Governance Code, which has been revised on 8 December 2016.

Figure 11: Ownership Structure

Source: Company data

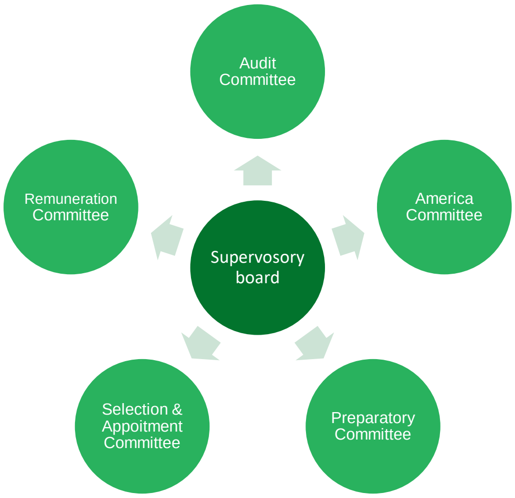
Executive Board´s is responsible to manage the company, which includes to set and achieve operational and financial objectives, and to develop the necessary strategies. It is composed by two members: The Chairman/CEO and the CFO, which are appointed for a maximum period of four year, in which only of the two can be re-elected, by the Supervisory Board on the AGM.

Supervisory Board´s members are ten. From these ten, six of them are independent between themselves, and the other four are strictly connected to A.H. Heineken, to preserve the continuity of Heineken Group. The purpose consists on supervising the Executive Board and to ensure external experience into HEINEKEN´s way of operating.

To help the Supervisory Board on their decisions, there are five Committees: Audit Committee; the Americas Committee; Preparatory Committee; Remuneration Committee and the Selection & Appointment Committee.

Corporate governance meets the company's diversity strategy in terms of people. As a family-owned company in its majority, it is hard for external investors to have a significant participation on HEINEKEN, attenuating the interest they may have in investing. Besides, since every crucial decision must be voted by the majority on the AGM, the family can easily impose their ideas and long-term strategies.

Figure 12: Supervisory Board and Commitees



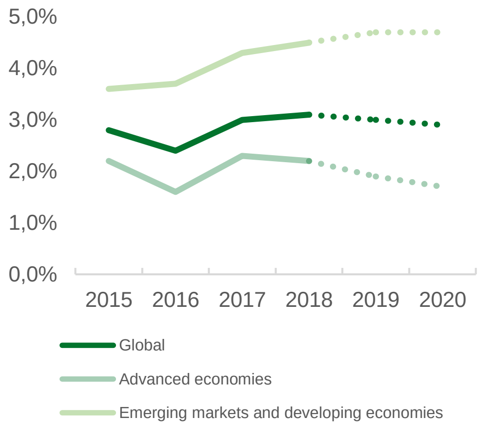
Source: Heineken N.V. Annual Report 2017

4. Industry Overview and Competitive Positioning

Global economic outlook

Global economy is facing a cycle of recovery, aided by a recovery in investment, manufacturing activity and trade. Better conditions of global financing like accommodative policies, rising confidence and firming commodity prices are behind this recovery. Estimation for global real GDP growth is 3,1% in 2018, thus surpassing the growths of 2016 and 2017, which were 2,4% and 3%, respectively, reflecting the notable growth of more than 50% of world economies, including the notable improvement on Euro Area.
In the next few years, it is expected that real GDP growth on advanced economies slows down to 2,2% in 2018 and 1,8% average 2019-2020, coinciding with the stabilization of cyclical upturn, after the recuperation in 2017 of 2,2%. With an important impact on global economy, these economies show a recovery in capital spending and exports, mainly in Euro Area, followed by United States and Japan. Growth on emerging economies will accelerate at an average of 4,7% in 2019-2020, driven by the activity of commodity exporters, with Brazil and Russia as the main players, and a stable growth of commodity importers, in which several large economies will compensate the slowdown of China.

Figure 13: Real GDP growth

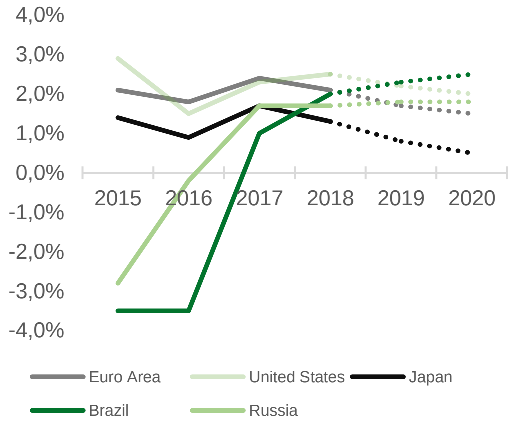


Source: Global Economic Prospects – January 2018

Industry overview

HEINEKEN operates in the beverages industry, which can be into sub-industries like Brewers, Soft Drinks & Waters, Wine & Spirits. Since HEINEKEN main activities are the production and selling of beer, and because the company´s Annual Reports do not separate their operations between different beverages, only an analysis of the beer industry is presented.

Figure 14: Real GDP growth



Source: Global Economic Prospects – January 2018

Global beer industry

The global market is valued in around €630.000m, which is about two and a half times larger than wine market and two times the spiritual drinks market. It is expected a continuous growth of 6% CAGR, reaching a value of roughly €890.000m by 2022. This continuous value´s growth is essentially related to increased consumption in developing countries. Concerning the volumes, despite the slowdown on established beer markets due to increasing saturation, global beer market continued to be the larger, representing 77,5% of global alcoholic drinks market, with 193.100m liters.

Beer industry dynamics are dependent on several factors such as GDP per capita, legislation, demographic indicators, market environment and others soft drivers like changes in lifestyle. Besides, since each region has their own patterns on each factor, a regional overview is presented, as well as global trends like market consolidation and premiumization.

Consolidation: Over the last few years, the top five brewers increase their combined market share in 7%, up to 53%, and if the top ten brewers are considered, the combined market share is 66,2%. This consolidation is mainly driven by the expansion of major companies, by two perspectives. One the one hand, acquisitions like the ones carried out by HEINEKEN, which acquired FEMSA in 2010, Asia Pacific Breweries in 2012 and Lagunitas in 2017, and the purchases of Grupo Modelo and SABMiller by AB InBev. On the other hand, the expansion of the leading brands to emerging markets, like Asia Pacific.

Premiumization: Based on their size and manufacturing capacity, breweries can be either microbreweries or macro breweries. Given the market entry facilities, microbreweries are registering a remarkable growth over the last few years, leveraged by increased consumer willingness to experiment locally produced premium beer. Besides, the growth in consumption of light beer (premium) is expected to register a higher CAGR in comparison with strong beer. The facts that more consumers are increasing their preferences to low calories and low alcohol products, combined with the rising number of female consumers in the age group of 21 to 30 years old, can be another premiumization indicator.

This trend is also levered by China, which with 460.000m liters produced in 2016 is the country with the highest volume of beer production. In this market, premium lager consumption is expected to increase in 4.000m liters until 2021 as an outcome of urbanization and western culture influence, particularly in younger groups, who are looking for higher quality beers, imported ones, or craft ones.

Segment overview

Europe: Over the last years, beer industry on Europe has witnessed moderate growth. Economic challenges which affect market growth and increased health concerns that are switching consumers preferences, were translated on inferior performance of crucial markets like Germany, France and UK. In terms of value, the registered CAGR over the period 2012-2016 was 1,5%, although revealing no growth in 2016 compared to the previous year, keeping the market valued on nearly €195.000m. Besides the 1,5% growth rate on this segment, Germany and UK, which together comprise 37,2% of European beer market, grew at lower CAGR level, 0,9% and 0,5%, respectively. The market value´s forecast is positive, since it is expected an acceleration up to 4,9% CAGR until 2021, with an acceleration on growth of major markets, reaching a total of nearly €250.000m. Concerning consumption volumes, have decay around 1,8% CAGR, to approximately 30.000m liters, being expected that until 2021 these volumes will continue to fall at a stable CAGR of 0,02%.

Europe is a market segment very consolidated, since the 3 key players combine, comprise 50% of market share, with HEINEKEN the main player, followed by AB InBev and Carlsberg. On trade is the major via of beer commercialization, with 64% stake, with hyper and supermarkets having a weight of only 23,4%.

Americas: The analysis of this segment distinguish North America (United States and Canada, and Mexico included) from Brazil.

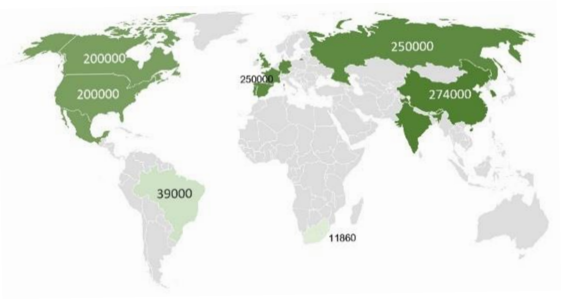
The first group is dominated by United States (79,5% weight), and is valued on approximately €160.000m, recording a CAGR of 4,2% from 2012 to 2016. This line of growth is expected to remain stable until 2021, when the market is predictable to be

Table 3: Top 10 companies´ volume market share

Rank	Company	Volume Share
1	AB InBev	26%
2	Heineken N.V.	9,9%
3	China Resources Holdings	6,1%
4	Carlsberg	6,0%
5	Molson Coors Brewing Co	4,9%
6	Tsingtao Brewery Co	4,1%
7	Asahi Group Holdings	3,4%
8	Beijing Yanjing Co	2,2%
9	Kirin Holdings Co	2,2%
10	Constellation Brands Inc	1,1%

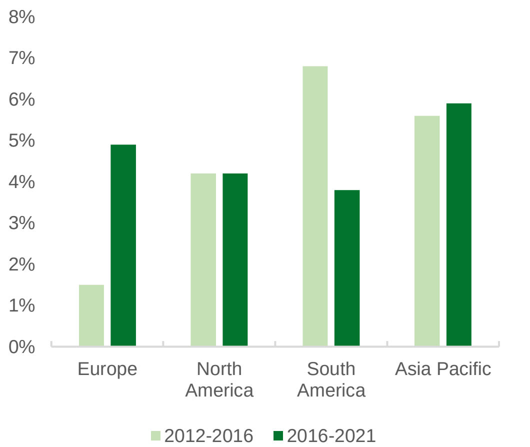
Source: Heineken Passport

Figure 15: 2021 expected market value by region (in percentage´ average)



Source: Market Line Beer & Cider

Figure 16: Value´ CAGR by region (in percentage average)



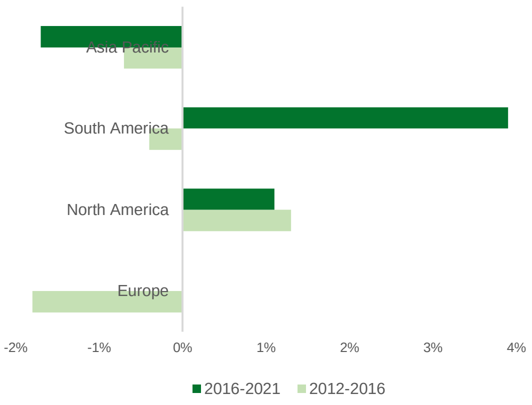
Source: Market Line Beer & Cider

worth nearly €200.000m, largely determined by economic stability, with an impact on rising disposable income. Due to health awareness, the growth is limited especially among young consumers. However, Canadian market will probably decline with a CAGR of 0,1%, while Mexican market will increase at a CAGR of 5,6%. It is estimated that in 2021 the United States, Mexican and Canadian markets reach, respectively, €160.000m, €20.000m and €16.855m. In terms of volumes, the CAGR is likely to be constant, at 1,2% average until 2021, increase from 34.000m liters up to 36.000m liters.

In line with Europe, on trade segment is the fundamental way of commercialization, followed by hyper and supermarkets, with both having a combine weight of 73,6%. Here, the market is very consolidated as well, with the main players together leaving only 25% share to minor competitors.

In South America, Brazil is the key market, since it is by significant difference the largest producer and consumer of this segment with 20% on total America´s segment. However, the value´s growth of 6,8% CAGR verified during the period 2012-2016, will probably slowdown to 3,1% CAGR until 2021, in which the market will likely be valued on €39.700m. The robust growth, despite the economic slowdown, was due to higher demand for smaller packaging variants and changes on consumption patterns.

Figure 17: Volume´ CAGR by region (in percentage´ average)



Source: Market Line Beer & Cider

South Africa: This country is the first alcohol consumer on Africa, even if economic challenges affected the overall market. The pattern of consumption is being marked by increasing focus on authenticity and innovation. Due to that, demand is changing their preferences to local and smaller brewers. Based on these tendencies, this market is expected to grow at 23% CAGR until 2021, reaching a value of €11.860m.

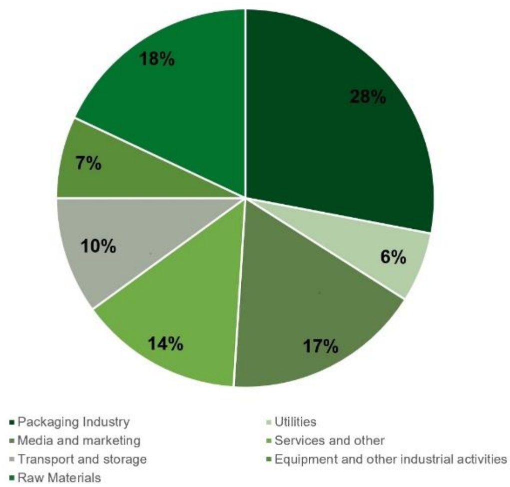
Asia Pacific: Given a solid growth verified during the period 2012-2016, the market is valued on €205.740m, being expected to grow at 5,9% CAGR, up to €274.000m, driven by stronger growth expected on China (6,6% CAGR), and increasing market volumes on South Korea and India. Although this increase, market volumes are likely to slightly decrease over the next period at a 1,7% CAGR, to 57.078m liters.

Differences compared to other regions can be seen at consolidation level. Most of the market share of this segment is delivered to small consumers, and not to main players, since the stake to minor players is 56,4% today.

Supply analysis

Brewers´ supply is made throughout distinct types of goods and services. This research is focused on the sectors with most weight among them, such as packaging industry and raw materials provided by agriculture.

Figure 18:Goods and services purchases by supply sector (in percentage)



Source: Brewers of Europe

Packaging industry: It represents nearly 30% of total brewers supply. Among total packaging, glass bottles, metal cans and kegs have 44,2%, 24,7% and 20,7% share, respectively.

Glass designated to packaging market was valued in €45.000m upon 2016, but the forecast is to grow at 4,5% CAGR until 2024. The slice designated to serve beer industry has been rising, accounting 20% of overall market, and it is estimated to grow at an equal CAGR of 4,5% due to increasing availability of varied sizes and shapes of beer bottles and innovations in chemical composition and design. On Asia Pacific it is located 40% of this industry, due to increasing demand of beer, huge customer base and developments on hospitality sector. In North America the growth is expected to be at 3% CAGR, also due to a well-developed pharmaceutical industry, which can impact the bottle manufacturing cost.

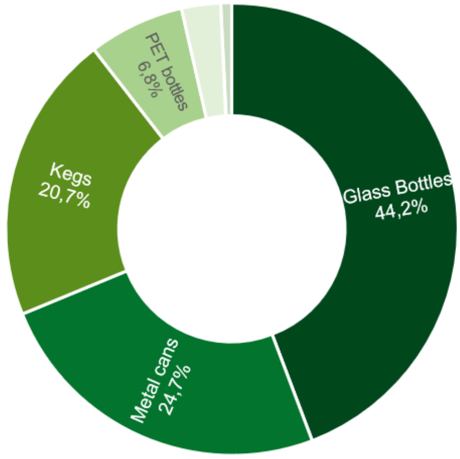
Despite glass remains chemically inert and pure on contact with many substances, allowing product safety, some handicaps like brightness, higher cost and transportation difficulties are increasingly demand for plastic materials on packaging industry, and these will likely hamper the share of glass on packaging.

Cans are usually made from aluminum due to its light weight and ease of recycling. The global demand for cans is increasing and it is mainly due to breweries growth and shifts on packaging necessities, with 46% and 45% weight, respectively. New breweries represent only 3% of demand increase.

New US legislation for aluminum may impact beer industry, since President Donald Trump announced that imported aluminum would be subject of tariffs. In the US, one of the main markets of beer, 52% of aluminum is imported, and despite the willingness of most breweries to stop import these metals, the internal supply is not enough, so these companies must continue their productions with imported products. On a per-can basis, the 10% tariff add may be considered low to beer consumers, because a six pack will only cost 6 cents more. But for brewers, production expenses may increase heavily, and may result on loss of sales.

Raw materials: It represents nearly 20% of total brewers supply, being barley, the main agriculture product used to produce beer. Despite its production costs followed a stable trend, which is expected to continue in 2018, barley prices have increased in 2017 after several years following a decreasing movement. In 2018 it is also expected that barley prices, per bushel, increase between 6% to 20%, driven essentially by tightening supplies and demand increases.

Figure 19:Packaging materials by type (in percentage)

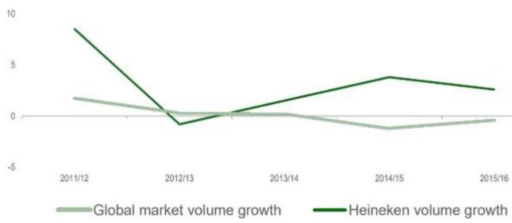


Source: Brewers of Europe

Competitive analysis

Over the last years, concerning the volumes' growth, HEINEKEN went from outperform the global market in 2012, boosted by the growth of its key markets and by the acquisition of Asia Pacific Breweries, to struggle and underperform global market in 2013. Such a trend is explained by the weak performance of Heineken® in the US, after this, it overlaps again for three consecutive years, levered by premiumization trend and strong performances of several key markets, such as Brazil, Mexico and Asian markets.

Figure 20:Global market vs Heineken 2011-2016 yoy (in percentage)



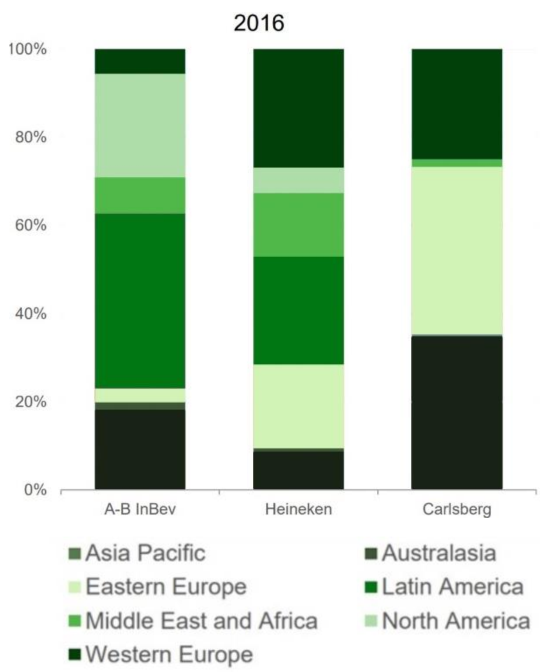
Source: Heineken Passport

Market share: HEINEKEN´s volume share continues to improve and to fix a solid second place, with 10% share, benefiting from the strong growth of emergent markets and from the acquisition of Lagunitas in 2017, despite the increasing gap registered to the major player, AB InBev. In fact, the main player always had an acquisition strategy to support its development, since the expansion to Asia Pacific markets, where the company gain the lead on South Korean by reacquire Oriental Brewery, and by purchasing Siping Ginsber and three major Big Boss breweries on Chinese market. In 2016, AB InBev acquired SABMiller, extending its advantage over competitors by having 26% market share.

Considering other important players roles in the market, China Resources saw its market share increase 6,0%, to 6,1%, achieving the third place globally driven by its light growth on its home market. Molson Coors and Asahi improve substantially their market shares in 2016, from 3,1% and 1,1%, to 4,9% and 3,4%, respectively. The first one entered in a joint venture in the US, where it took full control of MillerCoors, while Asahi purchase SABMiller´s European businesses, including total rights of brands like Peroni and Grolsch, in a move that gave the company for the first time, a foothold in the key Western European markets, as well as Eastern European interest.

HEINEKEN vs AB InBev competition: The dispute for market between the two larger brewers is generally intensifying, with the strategy to gain market share varying between companies´ segments, with the exception that both are increasing their focus on premiumization.

Figure 21: Regional market share (in percentage)



Source: Heineken Passport

In the US, where HEINEKEN as a strong focus on premium lager market, AB InBev exceed HEINEKEN in nearly 1.000m litters concerning standard lager, which means an overlap of 4,4%. Related to premium beer, the difference between both companies is only 0,9%, despite the efforts made by AB InBev to gain market share across younger generations. Constellation Brands are the number one player on sales in premium US market.

Regarding standard lager, Russia and UK are the markets where the difference is more pronounced and where HEINEKEN has low expression. China and Brazil are markets with an intense and equilibrated competition but with little advantage to the main player, while in Italy and Netherlands, HEINEKEN dominates.

Cider market consolidation: Cider market is on the same way as beer market, since its top five brewers have together 49% of market share. Considering the top ten breweries, only around 38% market share is left to small competitors. In this product segment, the trend is also premiumization. The main competitor is HEINEKEN, which increase its market share in 2016, up to 17,3%, especially due to expansion strategy to emerging markets and the introduction of new flavors in key markets. Despite the leadership on beer market and the acquisition of SABMiller, in the cider market AB InBev has only 3,7% share, being only the number 6. For its turn, Carlsberg, which registered an increase to 5,1% share due to its dominance in the most promising cider, Eastern Europe, occupies the fifth place on cider market. For their turn, both second and third players decrease market shares, at the same time as Boston Beer Co saw the decline in US cider market affecting their shares.

Table 4: Cider top 10 companies´ market share

Rank	Company	Volume Share
1	Heineken N.V	17,3%
2	Distell Group	13,8%
3	C&C Group	7,1%
4	Boston Beer Co	5,2%
5	Carlsberg	5,1%
6	AB InBev	3,7%
7	Kopparbergs Bryggeri	3,6%
8	Aston Manor Brewery Co	3,6%
9	Abro Bryggeri	1,8%
10	Thatchers Cider	1,8%

Source: Heineken Passport

Competitive positioning

Porter 5 Forces

Rivalry Intensity (strong): Consolidation is highly present on beer industry. All the top players are large brewers capable of benefiting from economies of scale, with low marginal fixed costs, and capable of promoting their main brands, making them easily identifiable by the public. The degree of rivalry is intensified by the low difference concerning the relation price/quality between standard beers and by the low changing costs. Besides consolidation, the number of microbreweries offering craft beer is high, especially on emergent markets.

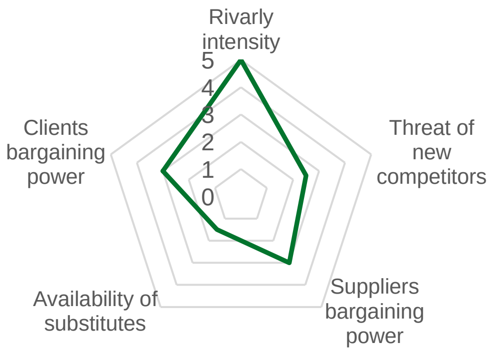
Threat of new competitors (moderate): To enter this market requires significant investments. Nevertheless, since premiumization is present in the market, a company can enter the market as a microbrewery and get good margins, recovering from initial investment. To become a larger company is much more difficult, because although the supply is accessible, good contracts to start mass production are harder to obtain, as well as entry on trade channels, since these retail houses demand high margins. In some countries, government regulation can be a barrier to enter the market.

Suppliers bargaining power (moderate): The main players incorporate some vertical integration to have more control about their supply. If this is not the case, long term contracts are made with independent suppliers of their raw materials. The facts that there are no substitutes products for raw materials, and the importance given to the quality of those products increase the supply power. The same happens to packaging materials, utilities and transportation costs.

Clients bargaining power (moderate): Low switching costs to the final consumer is the main force of clients' power. However, there are some cases in which retailers may have some power to negotiate quantity discounts, since on trade business is the major channel to consumers. Yet, since this is generally not the case, and one final consumer do not represent a big stake of companies´ revenues, there is no discount possibilities.

Availability of substitutes (low): The main substitutes for beer are other alcoholic drinks, such as spiritual drinks and wine, which are a lot more expensive. In some key markets, drinking beer is part of cultural tradition while people are hanging out, decreasing the preference for other drinks.

Figure 22: Porter 5 forces



Source: Personal Analysis

SWOT

Strengths

World most international brewer: The strong presence in more than 70 countries allow the company to monitor the growth of several emergent markets and to attract new consumers. It gives HEINEKEN the capacity to generate more revenues and to mitigate various economical and financial risks associated to certain activities in some countries.

Premium focus: HEINEKEN is one of the leading companies on premium market. This allow the company to follow premiumization trend in developed and emergent markets.

Brand innovation: The company´s commitment to innovation increase HEINEKEN competitive advantage by being the first to launch some products. The large portfolio proves that the company can adjust itself to new consumer´s preferences and tastes

Marketing Strategies: HEINEKEN is one major sponsor of UEFA Champions League, and in February 2017 extended its contract in another three years, adding lots of visibility to the brand since its one of the most viewed competitions worldwide. Besides, it has a lot of innovating marketing strategies.

Vision oriented towards sustainability: The commitment to be a sustainable company in all the value chain can enhance both short-term and long-term performance of the company. Besides the advantages value delivered to all stakeholders, it is a way to obtain new investors, since future results are more likely to be positive. Sustainable programs are one key point on the expansion plans to the company.

Long history: Long history and successful past of HEINEKEN, both in internal market and international expansion give the company creditability concerning several aspects like its values and business management.

Weaknesses

Limited presence in some markets: Despite the strong presence across many regions, it still lacks presence in some growing markets as Sub-Saharan markets, which are recognized as low income consumers, and Australian market, which is a country with high beer consumption per capita.

Western Europe: The company, despite the strong and growing presence across many markets, continues to have most of its revenues on Westerns Europe market, where the industry is stagnant and has low growing margins.

Lawsuits against: The company is currently defending itself against some legal proceeding. This can affect company´s results and the interest of some potential investors, as well as deteriorate HEINEKEN brand.

Opportunities

Asia Pacific: Asia Pacific, although its present size, has capability to grow a lot more and to become the main beer market. The acquisition of Asia Pacific Breweries brings HEINEKEN an opportunity to explore and to evolve in this market, thus surpassing the Western Europe stagnation problem.

US: The acquisition of the remaining 50% share of Lagunitas Brewing Company, which now reports to HEINEKEN America gives conditions to take a rare opportunity advantage on the US market, since HEINEKEN´s Mexican brands are performing well on it.

Global growing demand: Demand forecasts are positives, with the expected CAGR fixed on 5,6% until 2021. Merger and acquisition strategies followed by HEINEKEN will help to catch up and to absorve new market opportunities as to increase market share on consolidated markets.

Increasing health awareness: HEINEKEN, although its major operations are on alcoholic beverages market, has experienced significant improvement on low and zero alcohol markets. This is an opportunity as it shows the ease of adaptation to new consumption patterns.

Higher quality standards: Consumers are increasing their standards related to beer quality. Which concerns HEINEKEN, the brand is recognized for high quality production compared to most of its peers.

Figure 23: Heineken´ top 5 brands

Source: Heineken Passport

Figure 24: Asia Pacific beer market share by volume (in percentage)

Source: Heineken Passport

Threats

Macro challenges: Even though global economy is facing a recovery cycle, leveraged mainly by emergent economies growth, macroeconomic challenges on some beer key markets may impact the industry wealth.

Gap to AB InBev: AB InBev latest strategies led to a record gap concerning market shares, consolidating HEINEKEN as the second largest brewery. Related to this, the huge presence of the rival on Sub-Saharan and Latin America markets can negatively impact the future growth of HEINEKEN.

Increasing health awareness: Despite the opportunity related to this topic, there are always the threat of HEINEKEN decrease its revenues due to increasing health awareness.

Raw material: Although HEINEKEN uses forward contracts to mitigate this risk, price fluctuations due to higher demand from other markets and non-availability of necessary raw materials can impact gross margins and/or the stability of operations.

Legislation: Tighter legislation in some markets imposed by their governments can highly affect companies' revenues and operations.

5. Investment Summary

The recommendation to HEINEKEN is a HOLD with a target price of €91,55/sh for 2018YE issuing a FCFF method with an upside potential of 5,3% comparing to the December 31 closing price of €86,93/sh, with low-risk. Adjusted Present Value and Free Cash Flow to Equity supports this hold recommendation point of view with €90,48/sh and €88,82/sh, respectively, with both indicating that HEIA is currently undervalued.

Table 5: DCF price target computations

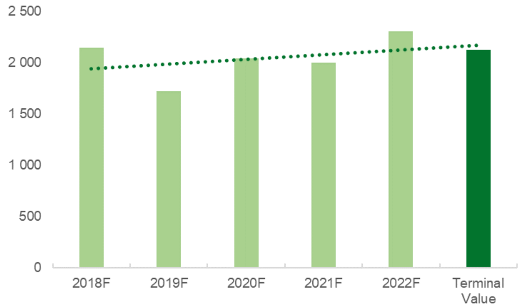
Terminal Value	**62 696**
PV of TV	55 439
PV of FCFF	9 440
Enterprise Value	64 879
Net Debt (-)	13 271
Minority interests (-)	1 200
Associates (+)	1 784
Equity Value	52 193
Number of shares	570 074 335
Price at December 2017	86,93
Price target	**91,55**
Upside Potential	5,32%

Source: Personal Analysis

Key value drivers and potential catalysts

The entering on Asia Pacific market and the stronger bet on American market: through the acquisitions of Asia Pacific Breweries and the remaining 50% piece of Lagunitas, respectively, HEINEKEN is solidifying its position in exploring new opportunities in markets that are not consolidated. On these markets it is possible to increase profitability decrease production costs. Throughout the forecasted period (2018 to 2022), it is expected that these segment´s influence on total revenues will increase, mainly due to the consolidated beer volumes: in the Americas, during the next five year, volumes are likely to increase 16,8%, while in Asia Pacific the growth is expected to be 41%.

Figure 25: Predicted FCFF for valuation period, including trendline



Source: Personal Analysis

Cider market is gaining importance on HEINEKEN´s portfolio: Although this market is following the European trend of consolidation (since the top five brewers combined have almost 50% share) it has been registering a demand growth worldwide. Currently HEINEKEN is the market share´s leader, and recent investments made by the company confirms that cider will gain influence on its portfolio.

Solid cash flow generation: the evaluation period between 2018 and 2022 is expected to be marked by the constant cash flows, mainly explained by operating activities, which will allow the company to have cash to settle its debt and to continuing the investment on market´s new opportunities. Linked to this cash generation are the Earnings Per Share (EPS), which are expected to increase from €3,4 in 2017 to €6,1 in 2022F. Dividends per Share (DPS) are also likely to grow from €1,77 to €2,81 during the same forecasted period.

Valuation method

In order to evaluate HEINEKEN, it was used three different valuation methods. Absolute valuation models used were the Discounted Cash Flow (DCF), the Adjusted

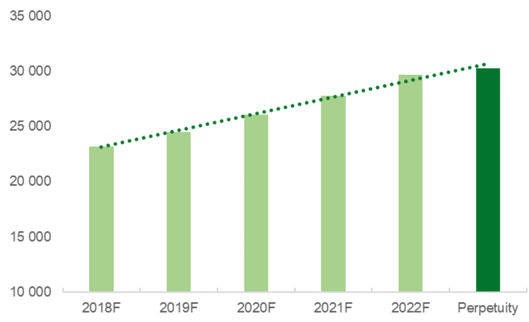
Present Value (APV), Free Cash Flow to Equity (FCFE). As complementary models it was used the Dividends Discount Model (DDM), which is another absolute method, and the relative valuation model, where it was used the Market Multiples approach. However, to perform final conclusions, only the first three absolute models are considered, being the DCF, the principal one.

Risks to achieve price target

Investors should be aware for the impact that the cost of capital for the Terminal Value has on the price target: one of the main assumptions in long-term WACC relies on the computation for the risk-free rate assumed. The 3,91% for the Rf was based on the assumption that current 10Y German bunds yields will not be maintained in the future, so the forecast was made having in consideration the 5Y average of the period before crisis - 31/12/2002 to 31/12/2007, for German bunds with 10Y maturity.

The impact of the predicted inflation: Selling prices have a lot of influence on the expected revenues, of which will derive a major part of the remaining assumptions. Besides, the 1,9% terminal growth rate was based on the expected inflation for 2022 of Netherlands, meaning that this recommendation is very dependent of this prediction.

Figure 26: Revenue on the valuation period



Source: Personal Analysis

6. Valuation

Forecast analysis

On this section there are explained the items that were forecasted with more complex procedures, and the ones that derive directly from internal business analysis (business description), industry analysis and competitive positioning.

Revenues

To forecast the revenues for the period 2018-2022, the company´s revenues were divided by their operating segments: Europe; Americas; Africa, Middle East & Eastern Europe; Asia Pacific and Head Office and Other/eliminations.

Instead of forecasting directly the nominal value of revenues, the forecast is made by segment, both for beer volumes, based on the industry analysis, and for the selling price.

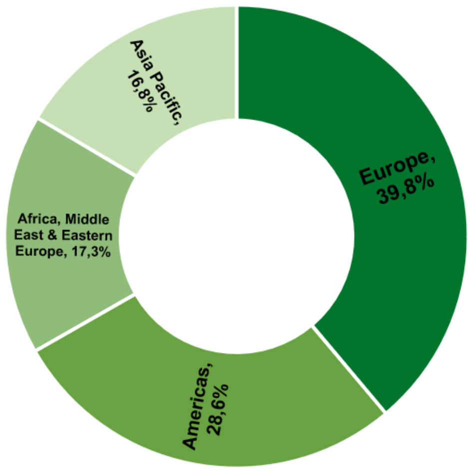
Europe: Since the European market is highly consolidated, there are short space to increase the revenues. Until 2019, the volumes are expected to slowly decrease at 1% and 0,5%, which is an inferior rate than the market, since HEINEKEN is at the moment outperforming it. From 2020, the volumes are expected to starting increase, first at a 1% rate, and in 2022 at a 2,5%, especially due to cider trend and premiumization, categories where HEINEKEN is leader and specialist.

Americas: Since the nominal growth on 2017 was related to acquisitions, the previous value of 2016 was fixed and this one expected to grow at a constant rate of: the average yoy% of 2014, 2015 and 2016, less 2% related to industry expectations for the volumes. The volume related to the last acquisitions is expected to grow at 3%, and slowdown to 2% in 2020.

Africa, Middle East & Eastern Europe: The macroeconomic conditions continue to be the same as the previous years in this region, so the expected growth that result from that will be assumed as constant. The good predictions for South Africa´ volumes, the new brewery on Mozambique and the triple digit growth of Strongbow will increase the previous growth in 2017 of 4,43% for 5% in 2018. This growth is expected to be maintained until 2020 and then slowly decrease to 4% in 2022.

Americas: Market volumes on this region are expected to decrease from 2019. Since HEINEKEN is investing here and outperforming the market, it will be assumed that in 2018 the growth will continue as the average of the last 4Y plus 1% related to the

Figure 27: Regional percentage of revenues in 2022F



Source: Personal Analysis

increasing strong presence on cider market. From 2019 forwards, the growth will slow down to 6% until 2022.

Head Office and Other/eliminations: This segment is predicted to grow considering the estimations for global inflation.

All the computations for the Revenues can be consulted on Appendix 7.

Selling price

The selling price for the period 2013-2017 is the average that results from the total revenues divided by total consumption volumes, for each region. Based on that, the predicted price for the forecasted period 2018-2022 has in consideration the price selling prices of 2017 and the expected inflation for the different regions.

COGS (Raw materials, consumables and services)

Over the historical period, the company assumed a stable percentage of COGS, compared to its revenues. The range of this percentage went from 63,46% and 61,86%. Considering the short movements on the supply side, COGS are expected to be the average of 62,70% of the last five years in percentage of revenues.

Personnel expenses

With no indicators that might influence changes on personnel expenses, this item shown a similar behavior during the historical period as COGS. With a minimum percentage of sales of 15,69% (2016) and maximum of 16,22% (2017), the percentage´s historical average of 16,06% was assumed for the forecasted period 2018F-2022F.

CAPEX

HEINEKEN computes both PP&E and Intangible Assets values by assuming the sum of all investments made that occur in each item, subtracted by all costs. For the period 2018F-2022F, CAPEX is the value that is added to the accumulated costs of both items. Accumulated costs are expected to grow at a YOY% equal to the average of the historical period. 5,7% for PP&E and 19,9% for Intangible Assets. Both values make sense since the company is continuously investing in emergent markets.

Amortization, depreciation and impairments

In line with CAPEX, this item for PP&E is computed by the average (53,97%) of the historical period of the accumulated amortization, depreciation and impairments, in percentage of total costs of the previous year. The nominal value to appear on cash flow statement is the difference between consecutive years.

On Intangible Assets, since the percentage was constantly increasing during 2013-2017, it was assumed a percentage of accumulated total costs for the period 2018F-2022F of 14,5%. On this item, the value appearing on cash flow statement is also de difference between consecutive years.

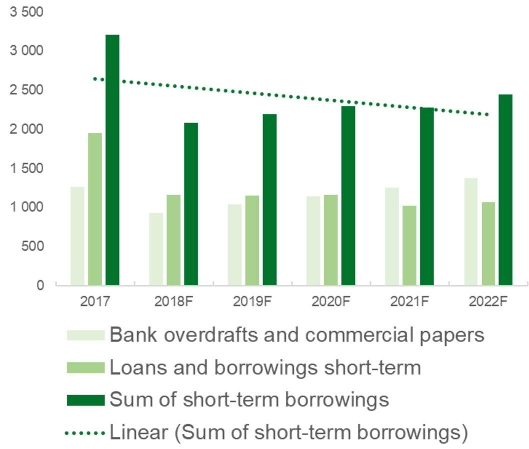
Loans and borrowings

It is important to refer that these items, both current and non-current loans and borrowings and also bank overdrafts and commercial papers were computed in a different way compared to the values referred on the cash flow statement for their proceeds and repayments (financing activities). So, the values that appear on balance sheet and cash flow statement are explained in the correspondent appendixes, while all Loans and Borrowings computations can be consulted on Appendix 8.

Interests

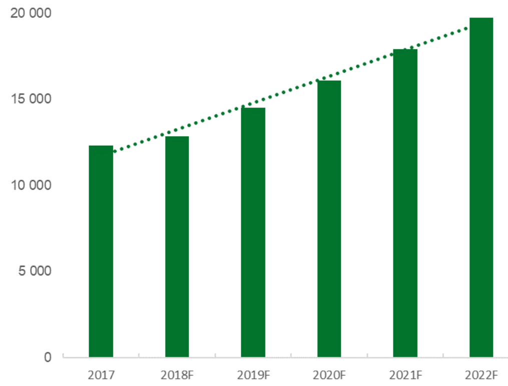
Since the company discriminate each type of its obligations and disclose information, like the terms and the debt repayment schedule, interests for each year are computed

Figure 28: Short-term borrowings through the forecasting period



Source: Personal Analysis

Figure 29: Long-term borrowings through the forecasting period



Source: Personal Analysis

based on that schedule and based on forecasted long-term proceeds, like it is explained on the Appendix 8.

WACC Assumptions

The Weighted Average Cost of Capital (WACC), was estimated to discount the cash flows of the firm. HEINEKEN financial structure includes both equity and financial debt and the WACC is dependent on the cost of each one and their respective weight. The Appendix 10 contains all the computations for both short-term WACC and for long-term

WACC.

Capital Structure

An important input to compute WACC is the capital structure. Over the last year, Heineken N.V. had maintained a stable debt-to-value ratio, between 46% and 52%. In which this 52% were reached on years with high investment. So, looking at these numbers, there is no prediction of any sudden change, and the target is 48,73% for the referred ratio, equalizing the average of the historical period.

Cost of Equity

Cost of Equity was estimated under the Capital Asset Pricing Model (CAPM), which has four variables: Risk-free rate, levered beta, market risk premium (MRP) and country risk premium (CRP). Since HEINEKEN is headquartered on Europe and presents its statements on euros, the Rf rate also had to be in euros. So, to estimate the Rf rate for the period 2018F-2022F, the 5Y average (03/01/2014 to 16/08/2018) yield of German bund with 10Y maturity was used. To get the perpetual Rf, it was also used a 5Y average yield of German bunds with 10 years maturity, but for the period before crisis (31/12/2002 to 31/12/2007), since it is expected a future increase of the yields. These forecasts result on a risk-free until 2022F of -0,05% and 3,91% for the perpetual risk-free.

To determine the levered beta, it was computed the 5Y correlation between the stock market prices where Heineken N.V. is inserted, which is Amsterdam Exchange Index (AEX), and the company. It has resulted on 0,734, meaning that Heineken N.V.´ stock is low risk when compared to AEX´ stock volatility.

Regarding the MRP and the CRP, Damodaran´s predictions on January 1st, 2018 were utilized, with 5,08% and 0,00%, respectively.

Cost of debt

Heineken´s cost of debt, during the historical period, has showed a decreasing trend. This trend, as consequence of how interests were computed (explained on Appendix 9´ table), will continue to occur until 2022F. From that day forwards, it is expected that cost of debt (Kd) will increase again, and for the perpetuity, the percentage assumed is equal to the historical average, 3,93%.

Table 6: Ke, Kd and WACC

Year	Ke	Kd	WACC
2018F	3,68%	3,08%	2,96%
2019F	3,68%	2,86%	2,89%
2020F	3,68%	2,39%	2,72%
2021F	3,68%	2,04%	2,60%
2022F	3,68%	1,73%	2,49%
Perpetuity	**7,63%**	**3,93%**	**5,29%**

Source: Personal Analysis

Table 7: Income Statement items forecast 2018/2022

Item	2018F	2022F
Revenue	23 136	29 692
Raw materials, consumables and services	14 506	18 616
Gross Profit	8 630	11 076
Personnel expenses	3 715	4 768
Amortisation, depreciation and impairments	1 534	924
Operating profit	3 381	5 383
Net finance expenses	450	379
Profit before income tax	3 005	5 080
Profit	2 179	3 668

Source: Personal Analysis

Discounted Cash Flow

Based on the forecasts explained on the previous sections, all the required information for the computation of the FCF and consequently the enterprise value and equity value are now available.

This method computations can be divided into two parts: the valuation period (2018F-2022F) and the perpetuity. The FCFF for perpetuity is computed the same way as for the valuation period, but this one must be discounted first to the year 2022F, at a rate of long-term WACC minus the *g.* The Present Values for both valuation period and perpetuity, through the DCF model are €9.440m and €55.439m, meaning that perpetuity has more influence on the price target, being at the same time, riskier.

After adding both PV, the Enterprise Value is obtained, valued on €64.879m, to which Net Debt and Minor Interests are subtracted and Associated are added, resulting on €52.193m of Equity Value. The Equity Value, divided by the 570.074.335 shares, results on a price per share for the year ending 2018 of €91,55, corresponding to a hold recommendation with 5,32% upside potential.

These computations can be consulted on appendix 11.

Adjusted Present Value

The second model to be performed on this valuation was the Adjusted Present Value (APV), which gave us HEINEKEN´s value, in case of the company was financed only by equity plus the present value of its financial benefits, having in consideration tax shields provided by deductible interests. To do that, all the necessary inputs are already available and can be consulted on Appendix 12.

The results obtained supports the hold recommendation made through DCF model, since it was reached a price target of €90,48/sh (upside potential of 4% compared to 2017 closing price).

Free Cash Flow to Equity

This third method was computed to evaluate the company by how much cash is available for the shareholders, after all expenses, reinvestment and debt payments. During the first two forecasted years, the company will likely pay its dividends with free cash flow to equity, since the FCFE are predicted to be higher than dividends paid on both 2018F and 2019F. After that, the company will show a behavior that is not concordant with investors desire, since it will probably start to pay dividends through existing capital or by issuing new securities.

So, the price target given by FCFE is €88,82/sh, which is in accordance with the hold recommendation. Computations for this method can be consulted on Appendix 13.

Both complementary models such as Dividend Discounted Model (DDM) and Relative Valuation, can be consulted on Appendix 14, 15 and 16.

Table 8: Comparables´ betas

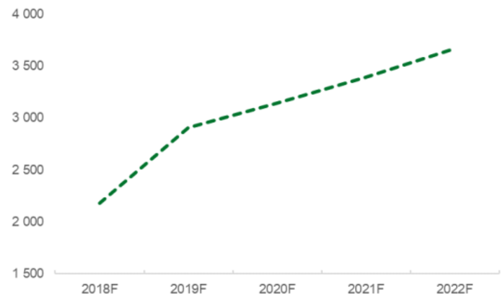
Company Name	Beta
Anheuser Busch InBev NV	0,98
Diageo PLC	0,92
Coca-Cola	0,78
Pernod Ricard SA	0,78
Carlsberg A/S	0,76
Heineken NV	**0,73**
Heineken Holding NV	0,71
PepsiCo	0,71

Source: Personal Analysis / Financial Times

7. Financial Analysis

Until 2017, Europe was by large margin, the number one segment in terms of **revenues** for the company. The expectations are that the percentual difference for the other regions will decrease, maintaining the trend that comes since 2015. Instead of the 47% (2017) share on HEINEKEN´s revenues, Europe is likely to have in 2022F, 41% share. The company will see its investment compensate, by increasing the share of Asia Pacific in more than 3%, up to 17%. The Americas share part are expected to stay at the same level, which is around 29%. To refer that, although the higher investment on Americas, the share part of Africa, Middle East & Eastern Europe is expected to increase at a higher percentage, when compared, due to its expected inflation and higher prices, from 14% to 17,3%

Figure 30: Profit curve 2018F - 2022F



Source: Personal Analysis

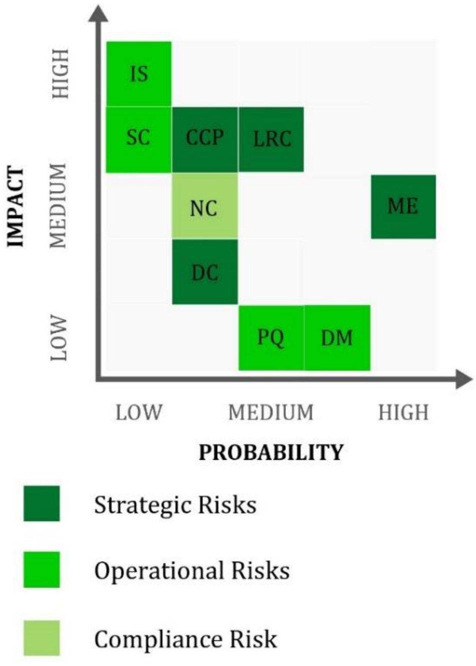
The historical period shown little variations on equity's and liabilities´ weights: from 2013 to 2015, equity weight increase, and until 2017 it decreases again. So, the firm´s **capital structure** is expected to continue stable. Total shareholder´s equity weight will increase up to 38% in 2018F, and then constantly grow to 40% in 2022F, keeping the capital structure ratio around 40%-60%. This change will happen mainly due to the good performance of the firm, combined with the lower payout ratio (compared to 2016) which will largely increase its retained earnings. On the opposite side, total liabilities are expected to increase especially due to long term loans and borrowings.

HEINEKEN´s **liquidity**, although during the historical period had maintained constant levels, it is expected to highly increase, more than doubling the current and quick ratios, comparing 2017 to 2022F, from 79% and 62%, to 162% and 141%, respectively. These constant increases along the evaluation period are explained by the weight of the positive cash flows registered in every year. On average, HEINEKEN will generate nearly 1.770€ each year. The expected better performance of the operating activities combined with the positive values on financing activities also explain the better position of HEINEKEN to generate cash to pay its current debt.

A different behavior is expected for the company´s **profitability,** since it will mostly keep its ratios constants until 2022F (37% of gross margin, 18% EBIT margin and 12% Net profit margin), since it is expectable that HEINEKEN will maintain its COGS and personnel expenses percentages unchanged like it did on historical period. Another reason to justify these constant levels is that the forecasts for loans and borrowings were made in order to maintain HEINEKEN´s **solvency** by keeping debt-to-value ratio equilibrated on 49%, which is equal to the average of the historical period. It also results on constants ROE and ROA during 2018F-2022F, which are likely to be around 16% and 6%, respectively.

The good performance of the company is supported by the continued increase in its **dividend per share** and **earnings per share** ratios. Dividends are expected to increase more than 1€ per share until 2022F, up to 2.81€, while earnings per share will double over the same period, from 3,4€ to 6,1€. During the historical period, the company shown a slightly increase on its dividends paid, which continues through the evaluation period (2018F-2022F). Payout ratio will maintain its percentage constant on 47%, so the better **profitability** is explained by HEINEKEN´s performance, and by the fact that is assumed to keep the same number of shares throughout the forecasted period.

Figure 31: Risk Matrix



Source: Personal Analysis

8. Investment Risks

Strategic risks

Legal and regulatory changes (LRC): HEINEKEN freedom to operate in various market could be affected by regulatory or legal restrictions on alcoholic markets. These restrictions can be pointed to marketing, sponsorship, products´ availability and, most important, taxes and duties. To manage this risk, HEINEKEN enhance the importance of responsible consumptions, and through Brewing a Better World program, tries to prevent and reduce harms that alcohol abuse brings.

Macroeconomic environment (ME): Political and economic uncertainties can impact any business operations. Recessions, inflation, trade restrictions, law changes, fluctuations on exchange rates, devaluations are some examples. This risk is not only present on emergent markets. Brexit and Donald Trump election to US president create instability on developed markets. To respond to such events, HEINEKEN try to be always prepared, with tools that increase company´s agility, and daily processes that allow the company to not be affected by such events.

Changing consumer preferences (CCP): Popularity of craft beer and low or no alcohol beer is increasing on consumer preferences. Incapacity to not follow this trend could have a high impact on company´s revenues and margins. To mitigate this risk, HEINEKEN is always innovating either through enhancing its commercial organization, or significant investments for new product like Heineken®0.0 and acquisitions like Lagunitas.

Distribution channel (DC): HEINEKEN must keep a strong relationship to its suppliers to be able to achieve better contracts especially in the current scenario of market consolidation. On the other hand, commercial channels are adapting, being e-commerce the new trend. If some of these parts fail, it could lead to a deterioration of company´s revenues and market share. Due to that, HEINEKEN is constantly improving its business relations with key retailers and suppliers, as well as developing e-commerce strength.

Operational risks

Information security (IS): IT infrastructure is vital on HEINEKEN´s business. Loss or breaches on confidential information and classified data may lead to financial and reputational disruption. Recent events show that online threats are becoming more

Table 9: Risks associated to each item / input

Investment Risks	
Strategic Risks	
LRC	Tax Rate & WACC
ME	Terminal growth rate (g)
CCP	Revenues
DC	COGS
Operational Risks	
IS	CAPEX
SC	COGS
DM	Personnal Expenses
PQ	Personnal Expenses
Compliance Risk	
NC	Revenues on different segments (except Europe)
Other risks to be analised without being linked to anothers	
	Rf
	Ke
	Kd
	D&A

Source: Personal Analysis

professional with the appearance of Cloud uptake or Internet of Things. HEINEKEN created and continue to develop and strengthening its resilience against these threats.

Supply chain (SC): Incapacity to obtain raw materials due to difficulties on selling valuable contracts, environmental catastrophes, terrorism or water scarcity can affect production volumes. Consequently, it may have a direct impact on company´s operational margins.

Digital media (DM): Digital media could be a threat because HEINEKEN cannot control all the information that circulates about the company. In case of anyone tries to create a false image or news about the company in private channels, it is very hard to stop that. HEINEKEN is constantly making efforts to enhance its monitoring capacity in several languages by training their personnel on the digital sector.

Product quality (PQ): HEINEKEN must certify that all its products are in good conditions to be commercialized. In contrary, the company can incur in sever problems related to contamination of its products, damaging its reputation and capability to obtain investors. Changes on regulations and increasingly quality standards increase the risk and the impact that a failure can have to the company. HEINEKEN in order to mitigate these risks has established a company-wide Quality Assurance program.

Table 10: Recommendation system for low risk companies

Heineken scores 9 in a scale of 0 to 10 (0 is very high risk, 10 is very low risk)		
≤ -10%	≤ 78,23	Sell
> 10% & ≤ 0%	> 78,23 & ≤ 86,93	Reduce
> 0% & ≤ 10%	> 86,93 & ≤ 95,62	Hold / Neutral
> 10% & ≤ 20%	> 95,62 & ≤ 104,32	Buy
> 20%	> 104,32	Strong Buy

Source: Personal Analysis

Compliance risk

Non-compliance (NC): Changes on legal and regulatory environment increase the non-compliance risk. Aspects like corruption, data privacy laws, competition and human rights are potential drivers to incur in this risk. HEINEKEN keeps enhancing its internal compliance system and improving Company Rules and HEINEKEN Code of Business Conduct to mitigate the risk.

Sensitivity Analysis

All the sensitivity analysis performed is based on the price target of €91,55/sh reached by the Discounted Cash Flows (DCF) model.

As it was mentioned before on investment summary, there is a high risk associated with the risk-free (Rf) assumed for the Terminal Value, since it was obtained through the 5Y average yields of German bunds with 10Y maturity, of the period before crisis. This prediction is in line with expectations for the near future, but nobody can know exactly what pace. To have a point of view about the impact that changes on these yields can have on the price target, the table below was elaborated, and it aligns possible changes for the long-term Rf and changes on long-term Corporate Tax Rate.

Table 11: Sensitivity analysis for the long-term Risk-free and for Corporate Tax Rate

		Long-term Rf						
	91,55	2,50%	3,00%	3,30%	3,50%	3,91%	4,50%	5,00%
Corporate Tax Tate	15%	107,11	98,01	93,23	90,27	84,80	77,81	72,71
	18%	109,38	99,93	94,96	91,91	86,25	79,04	73,80
	20%	110,94	101,24	96,16	93,03	87,25	79,88	74,54
	23%	113,36	103,27	98,00	94,76	88,78	81,18	75,68
	26%	115,89	105,38	99,91	96,55	90,36	82,52	76,85
	28,2%	117,81	106,98	101,35	97,90	91,55	83,52	77,73
	30%	119,42	108,33	102,57	99,04	92,55	84,37	78,47

As it can be observed, an increase/decrease of the long-term Rf, of just 0,5% (at least), keeping corporate tax rate constant, would result on a change on the recommendation. On extreme cases, a change of approximately 1% would result on a strong buy/sell recommendation. Changes on Corporate tax rate, which is also depend of macroeconomic environment, keeping long-term Rf, would not have the same impact, since it was necessary a decrease to 18% to change the recommendation.

Another crucial risk mentioned was the terminal growth rate (g). Just like the yields, it is barely impossible to know exactly how the changes will occur. So, to understand it impact on price target, the table below combine both changes on terminal growth rate and on the long-term WACC.

Table 12: Sensitivity analysis for the Terminal growth rate (g) and for the long-term WACC

		Terminal Growth rate (g) / Netherlands predicted inflation for 2022						
	91,55	1%	2%	1,75%	1,9%	2,0%	2,1%	2,2%
Long-term WACC	4,3%	100,60	111,99	123,53	131,60	137,57	144,08	151,22
	4,7%	88,45	97,28	106,01	111,99	116,35	121,04	126,11
	5%	81,02	88,45	95,69	100,60	104,14	107,93	111,99
	5,29%	74,90	81,29	87,43	91,55	94,51	97,65	101,00
	5,8%	65,94	70,94	75,67	78,80	81,02	83,36	85,84
	6,5%	56,48	60,21	63,68	65,94	67,53	69,19	70,94
	7%	51,12	54,22	57,07	58,92	60,21	61,55	62,95

The conclusion to this stress test is that it is required an increase of only 0,2% and a decrease of 0,4% to change the recommendation, keeping long-term WACC constant. By its side, long-term WACC, keeping the *g* constant, also has high impact. If it increases to values above 6%, the investor should sell, but if it decreases to values below 5%, a buy recommendation is given to the investor, because shares would be highly undervalued.

More sensitivity analyses are available to consulting on the Appendix 17, testing the impact of changes on Kd and Ke, the respective weights of debt and equity of the firm, the capex% on TV combined with D&A % on TV and the percentage (in terms of revenues) of COGS and personnel expenses.

Monte Carlo Simulation

To have a more detailed sensitivity analysis to the price target reached by the DCF method, the Monte Carlo simulation was performed. On this test, there are tested the impact that changes on the inputs used on perpetuity have on the price target. The inputs are: weight of equity, weight of debt, Rf, Kd, Ke, corporate tax-rate, market risk premium, beta, *g*, ebitda margin, D&A yoy%, capex yoy%, trading cycle and WACC.

The teste was run on crystal ball, by simulating 10.000 valuations.

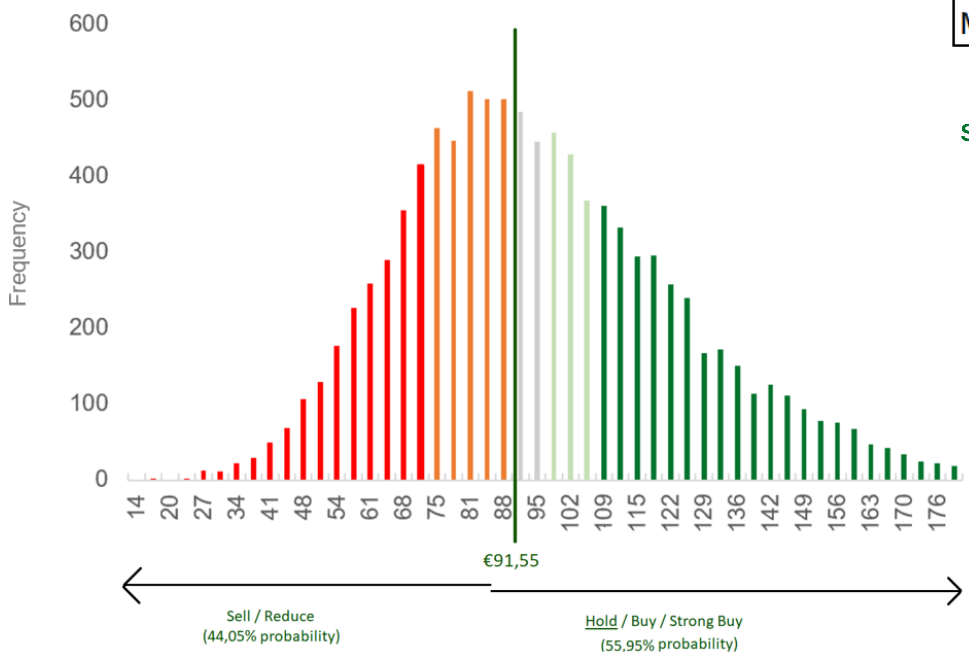
The average price target reached is €95,01/sh, supporting the hold recommendation. The hold recommendation has a 11,90% probability of being accurate.

Table 13: Monte Carlo Results

Valuations	10000
DCF	91,55 €
Mean	95,01 €
Median	91,16 €
Minimum	7,82 €
Maximum	300,74 €

Source: Crystal Ball

Figure 32: Monte Carlo Simulation



Appendices

Appendix 1: Statement of Financial Position

(In millions of €)

	Historical Statements					Projected Stetements				
Period Reference	1	2	3	4	5	6	7	8	9	10
End of Period	**2 013**	**2 014**	**2 015**	**2 016**	**2 017**	**2018F**	**2019F**	**2020F**	**2021F**	**2022F**
Assets										
Property, plant and equipment	8 454	8 718	9 552	9 232	11 117	11 629	12 860	14 161	15 534	16 985
Intangible assets	15 934	16 341	18 183	17 424	17 670	17 580	17 650	17 754	17 900	18 096
Investments in associates and joint ventures	1 883	2 033	1 985	2 166	1 841	1 784	1 727	1 671	1 614	1 557
Other investments and receivables	762	750	872	1 077	1 113	1 372	1 631	1 890	2 149	2 408
Advances to customers	301	254	266	274	277	330	312	372	357	422
Deferred tax assets	508	661	958	1 011	768	768	768	768	768	768
Total non-current assets	**27 842**	**28 744**	**31 800**	**31 184**	**32 786**	**33 463**	**34 949**	**36 616**	**38 323**	**40 236**
Inventories	1 512	1 634	1 702	1 618	1 814	1 913	2 032	2 168	2 307	2 476
Trade and other receivables	11	2 743	2 873	3 052	3 496	3 407	3 606	3 839	4 091	4 372
Prepayments	2 427	317	343	328	399	389	411	438	467	499
Current tax assets	218	23	33	47	64	64	64	64	64	64
Cash and cash equivalents	1 290	668	824	3 035	2 442	**2 571**	**4 886**	**6 857**	**9 065**	**11 387**
Assets classified as held for sale	37	688	123	57	33	0	0	0	0	0
Total current assets	**5 495**	**6 086**	**5 914**	**8 137**	**8 248**	**8 343**	**10 999**	**13 367**	**15 995**	**18 797**
Total assets	**33 337**	**34 830**	**37 714**	**39 321**	**41 034**	**41 806**	**45 948**	**49 983**	**54 317**	**59 033**
Equity										
Share capital	922	922	922	922	922	922	922	922	922	922
Share premium	2 701	2 701	2 701	2 701	2 701	2 701	2 701	2 701	2 701	2 701
Reserves	858	427	655	1 173	2 129	2 129	2 129	2 129	2 129	2 129
Retained earnings	8 637	9 213	10 567	10 788	11 827	12 991	14 873	16 647	18 556	20 624
Equity attributable to equity holders of the Company	**11 402**	**12 409**	**13 535**	**13 238**	**13 321**	**14 485**	**16 367**	**18 141**	**20 050**	**22 118**
Non-controlling interests	954	1 043	1 535	1 335	1 200	1 200	1 200	1 200	1 200	1 200
Total equity	**12 356**	**13 452**	**15 070**	**14 573**	**14 521**	**15 685**	**17 567**	**19 341**	**21 250**	**23 318**
Liabilities										
Loans and borrowings	9 853	9 499	10 658	10 954	12 301	12 831	14 505	16 089	17 926	19 729
Tax liabilities	112	3	3	3	0	0	0	0	0	0
Employee benefits	1 202	1 443	1 289	1 420	1 289	1 517	1 605	1 709	1 822	1 947
Provisions	367	398	320	302	970	970	970	970	970	970
Deferred tax liabilities	1 444	1 503	1 858	1 672	1 495	1 495	1 495	1 495	1 495	1 495
Total non-current liabilities	**12 978**	**12 846**	**14 128**	**14 351**	**16 055**	**16 813**	**18 575**	**20 264**	**22 212**	**24 141**
Bank overdrafts and commercial papers	178	595	542	1 669	1 265	926	1 036	1 141	1 254	1 376
Loans and borrowings	2 195	1 671	1 397	1 981	1 947	1 159	1 153	1 158	1 024	1 066
Trade and other payables	5 131	5 533	6 013	6 224	6 756	6 736	7 129	7 591	8 089	8 644
Current tax liabilities	317	390	379	352	310	310	310	310	310	310
Provisions	171	165	154	154	178	178	178	178	178	178
Liabilities associated with assets classified as held for sale	11	178	31	17	2	0	0	0	0	0
Total current liabilities	**8 003**	**8 532**	**8 516**	**10 397**	**10 458**	**9 308**	**9 806**	**10 378**	**10 855**	**11 574**
Total liabilities	**20 981**	**21 378**	**22 644**	**24 748**	**26 513**	**26 121**	**28 382**	**30 642**	**33 068**	**35 715**
Total equity and liabilities	**33 337**	**34 830**	**37 714**	**39 321**	**41 034**	**41 806**	**45 948**	**49 983**	**54 317**	**59 033**

Source: Company data and personal estimates

Appendix 2: Income Statement

(In millions of €)

	Historical Statements					Projected Statements				
Period Reference	1	2	3	4	5	6	7	8	9	10
	2013*	**2 014**	**2 015**	**2 016**	**2 017**	**2018F**	**2019F**	**2020F**	**2021F**	**2022F**
Revenue	**19 203**	**19 257**	**20 511**	**20 792**	**21 888**	**23 136**	**24 486**	**26 073**	**27 784**	**29 692**
Europe	9 004	9 761	10 227	10 112	10 207	10 317	10 491	10 840	11 267	11 826
Americas	4 495	4 631	5 159	5 203	6 258	6 677	7 109	7 548	8 007	8 497
Africa, Middle East & Eastern Europe	4 103	3 189	3 263	3 203	3 059	3 433	3 825	4 248	4 680	5 126
Asia Pacific	2 037	2 088	2 483	2 894	3 005	3 373	3 747	4 146	4 561	4 999
Head Office and Other/eliminations	436	412	621	620	641	**663**	**686**	**709**	**731**	**755**
Other income	226	93	411	46	141	0	0	0	0	0
Raw materials, consumables and services	12 186	12 053	12 931	13 003	13 540	14 506	15 353	16 348	17 420	18 616
Gross Profit	**7 243**	**7 297**	**7 991**	**7 835**	**8 489**	**8 630**	**9 134**	**9 726**	**10 364**	**11 076**
Personnel expenses	3 108	3 080	3 322	3 263	3 550	3 715	3 932	4 187	4 461	4 768
Amortisation, depreciation and impairments	1 581	1 437	1 594	1 817	1 587	1 534	788	831	876	924
Total expenses	**16 875**	**16 570**	**17 847**	**18 083**	**18 677**	**19 755**	**20 072**	**21 365**	**22 758**	**24 308**
Operating profit	**2 554**	**2 780**	**3 075**	**2 755**	**3 352**	**3 381**	**4 414**	**4 708**	**5 026**	**5 383**
Interest income	47	48	60	60	72	72	72	72	72	72
Interest expenses	579	457	412	419	468	432	448	412	387	360
Other net finance income/(expenses)	61	79	57	134	123	91	91	91	91	91
Net finance expenses	**593**	**488**	**409**	**493**	**519**	**450**	**466**	**431**	**406**	**379**
Share of profit of associates and joint ventures and impairments thereof (net of income tax)	146	148	172	150	75	75	75	75	75	75
Profit before income tax	**2 107**	**2 440**	**2 838**	**2 412**	**2 908**	**3 005**	**4 023**	**4 352**	**4 695**	**5 080**
Income tax rate	26,52%	31,94%	26,14%	29,75%	26,65%	28,2%	28,2%	28,2%	28,2%	28,2%
Income tax expense	520	732	697	673	755	826	1 113	1 206	1 303	1 411
Profit	**1 587**	**1 708**	**2 141**	**1 739**	**2 153**	**2 179**	**2 909**	**3 146**	**3 392**	**3 668**
Attributable to:										
Equity holders of the Company (net profit)	1 364	1 516	1 892	1 540	1 935	1 961	2 691	2 928	3 174	3 450
Non-controlling interests	223	192	249	199	218	218	218	218	218	218
Profit	**1 587**	**1 708**	**2 141**	**1 739**	**2 153**	**2 179**	**2 909**	**3 146**	**3 392**	**3 668**

* 2013´ revenues on Europe and Africa, Middle East & Eastern Europe were estimated by dividing Central and Eastern Europe´ revenues by 2, adding each part to each actual segment

Source: Company data and personal estimates

Appendix 3: Cash Flow Statement

(In millions of €)

	Historical Statements					Projected Stetements				
Period Reference	1	2	3	4	5	6	7	8	9	10
End of Period	**2 013**	**2 014**	**2 015**	**2 016**	**2 017**	**2018F**	**2019F**	**2020F**	**2021F**	**2022F**
Operating activities										
Profit	**1 587**	**1 708**	**2 141**	**1 739**	**2 153**	**2 179**	**2 909**	**3 146**	**3 392**	**3 668**
Adjustments for:										
Amortisation, depreciation and impairments	1 581	1 437	1 594	1 817	1 587	1 534	788	831	876	924
Depreciation and Impairments on PP&E						1 280	661	699	739	781
Amortisation and impairments on Intangible Assets						254	127	132	137	143
Net interest expenses	532	409	352	359	396	450	466	431	406	379
Gain on sale of property, plant and equipment, intangible assets and subsidiaries, joint ventures and associates	226	93	411	46	141	0	0	0	0	0
Investment income and share of profit and impairments of associates and joint ventures and dividend income on available-for-sale and held-for-trading investments	160	158	182	161	84	75	75	75	75	75
Income tax expenses	520	732	697	673	755	826	1 113	1 206	1 303	1 411
Other non-cash items	156	244	89	332	314	0	0	0	0	0
Cash flow from operations before changes in working capital and provisions	**3 990**	**4 279**	**4 280**	**4 713**	**4 980**	**4 915**	**5 202**	**5 539**	**5 902**	**6 308**
Change in inventories	42	104	27	20	185	99	119	137	139	169
Change in trade and other receivables and advances to customers and prepayments	5	325	59	228	241	46	204	320	266	378
Change in trade and other payables	88	456	403	328	495	20	393	462	498	555
Total change in working capital	**51**	**27**	**371**	**80**	**69**	**73**	**71**	**5**	**93**	**9**
Change in provisions and employee benefits	58	166	165	73	125	228	89	104	112	125
Cash flow from operations	**3 983**	**4 140**	**4 486**	**4 720**	**4 924**	**5 070**	**5 361**	**5 648**	**6 108**	**6 442**
Interest paid	557	522	446	441	463	522	538	503	478	451
Interest received	56	60	87	70	98	72	72	72	72	72
Dividends received	148	125	159	118	109	132	132	132	132	132
Income taxes paid	716	745	797	749	786	826	1 113	1 206	1 303	1 411
Cash flow related to interest, dividend and income tax	**1 069**	**1 082**	**997**	**1 002**	**1 042**	**1 145**	**1 448**	**1 505**	**1 577**	**1 658**
Cash flow from operating activities	**2 914**	**3 058**	**3 489**	**3 718**	**3 882**	**3 925**	**3 913**	**4 143**	**4 531**	**4 784**
Investing activities										
Proceeds from sale of property, plant and equipment and inta	152	144	83	116	187	0	0	0	0	0
Purchase of property, plant and equipment	1 369	1 494	1 638	1 757	1 696	1 792	1 893	1 999	2 112	2 231
Purchase of intangible assets	77	57	92	109	137	164	197	236	283	339
Loans issued to customers and other investments	143	117	195	219	259	259	259	259	259	259
Repayment on loans to customers	41	40	45	24	54	0	0	0	0	0
Cash flow (used in)/from operational investing activities	**1 396**	**1 484**	**1 797**	**1 945**	**1 851**	**2 215**	**2 349**	**2 495**	**2 654**	**2 830**
Free operating cash flow	**1 518**	**1 574**	**1 692**	**1 773**	**2 031**	**1 710**	**1 565**	**1 648**	**1 876**	**1 954**
Acquisition of subsidiaries, net of cash acquired	17	159	757	9	1 047	0	0	0	0	0
Acquisition of/additions to associates, joint ventures and other investments	53	7	543	68	93	0	0	0	0	0
Disposal of subsidiaries, net of cash disposed of	460	27	979	15	10	0	0	0	0	0
Disposal of associates, joint ventures and other investments	165	4	54	0	16	0	0	0	0	0
Cash flow (used in)/from acquisitions and disposals	**555**	**189**	**267**	**62**	**1 114**	**0**	**0**	**0**	**0**	**0**
Cash flow (used in)/from investing activities	**841**	**1 673**	**2 064**	**2 007**	**2 965**	**2 215**	**2 349**	**2 495**	**2 654**	**2 830**
Financing activities										
Proceeds from loans and borrowings	1 663	858	1 888	1 670	3 268	1 689	2 827	2 742	2 861	2 869
Repayment of loans and borrowings	2 474	2 443	1 753	1 001	3 205	1 947	1 159	1 153	1 158	1 024
Dividends paid	710	723	909	1 031	1 011	1 015	1 027	1 372	1 484	1 600
Purchase own shares and shares issued	21	9	377	31	0	0	0	0	0	0
Acquisition of non-controlling interests	209	137	21	294	18	0	0	0	0	0
Other	1	1	1	15	0	31	0	0	0	0
Cash flow (used in)/from financing activities	**1 752**	**2 453**	**1 173**	**672**	**966**	**1 242**	**641**	**217**	**219**	**245**
Net cash flow	**321**	**1 068**	**252**	**1 039**	**49**	**468**	**2 205**	**1 866**	**2 096**	**2 199**
Cash and cash equivalents as at 1 January	846	1 112	73	282	1 366	1 177	1 645	3 850	5 716	7 812
Effect of movements in exchange rates	55	29	43	45	140	0	0	0	0	0
Cash and cash equivalents as at 31 December	**1 112**	**73**	**282**	**1 366**	**1 177**	**1 645**	**3 850**	**5 716**	**7 812**	**10 011**

Source: Company data and personal estimates

Appendix 4: Key Financial Ratios

Key Financial Ratios	2013	2014	2015	2016	2017	2018F	2019F	2020F	2021F	2022F
Liquidity Ratios										
Current Ratio (x)	69%	71%	69%	78%	79%	90%	112%	129%	147%	162%
Quick Ratio (x)	50%	52%	49%	63%	62%	69%	91%	108%	126%	141%
Cash Ratio (x)		1%	3%	13%	11%	18%	39%	55%	72%	86%
Efficiency Ratios										
Total Assets Turnover (x)		56,5%	56,5%	54,0%	54,5%	55,9%	55,8%	54,4%	53,3%	52,4%
Accounts Receivables Turnover (x)		69,39	78,89	77,01	79,45	76,18	76,18	76,18	76,18	76,18
Collection Period (days)		5,3	4,6	4,7	4,6	4,8	4,8	4,8	4,8	4,8
Inventory Turnover (x)		7,7	7,8	7,8	7,9	7,8	7,8	7,8	7,8	7,8
Days in Inventory (days)		47,6	47,1	46,6	46,3	46,9	46,9	46,9	46,9	46,9
Payables Turnover (x)		3,6	3,3	3,4	3,2	3,4	3,4	3,4	3,4	3,4
Payables Period (days)		101	109	109	114	108	108	108	108	108
Operating Cycle (days)		52,9	51,7	51,3	50,9	51,7	51,7	51,7	51,7	51,7
Cash Cycle (days)		-48,5	-57,7	-57,5	-63,1	-56,5	-56,5	-56,5	-56,5	-56,5
Profitability Ratios										
Gross Profit Margin (%)		38%	39%	38%	39%	37%	37%	37%	37%	37%
EBITDA Margin (%)		22%	23%	22%	23%	21%	21%	21%	21%	21%
EBIT Margin (%)		14%	15%	13%	15%	15%	18%	18%	18%	18%
Net Profit Margin (%)		9%	10%	8%	10%	9%	12%	12%	12%	12%
ROA (%)		5%	6%	4%	5%	5%	6%	6%	6%	6%
ROCE (%)		11%	11%	10%	11%	10%	12%	12%	12%	11%
ROE (%)		13%	14%	12%	15%	14%	17%	16%	16%	16%
DPS	1,25	1,27	1,59	1,81	1,77	1,78	1,80	2,41	2,60	2,81
EPS (x)		2,7	3,3	2,7	3,4	3,4	4,7	5,1	5,6	6,1
Solvency Ratios										
Short-term Debt Ratio (%)	16%	14%	11%	20%	18%	12%	11%	11%	10%	9%
Long-term Debt Ratio (%)	80%	71%	71%	75%	85%	82%	83%	83%	84%	85%
Debt to Value Ratio (x)	50%	47%	46%	50%	52%	49%	49%	49%	49%	49%
Equity Multiplier (x)	2,7	2,6	2,5	2,7	2,8	2,7	2,6	2,6	2,6	2,5
Debt to EBITDA	3,0	2,8	2,7	3,2	3,1	3,0	3,2	3,3	3,4	3,5
Interest Coverage Ratio (x)	4,1	5,5	6,5	5,8	6,2	6,7	8,5	9,7	10,9	12,5
Capital Structure										
Equity Weight	37%	39%	40%	37%	35%	38%	38%	39%	39%	40%
Debt Weight	63%	61%	60%	63%	65%	62%	62%	61%	61%	60%
Payout Ratio	45%	42%	42%	59%	47%	47%	47%	47%	47%	47%

Source: Company data and personal estimates

Appendix 5: Common-Size Statement of Financial Position

(In millions of €)

	Historical Statements					Projected Stetements				
Period Reference	1	2	3	4	5	6	7	8	9	10
End of Period	**2013**	**2014**	**2015**	**2016**	**2017**	**2018F**	**2019F**	**2020F**	**2021F**	**2022F**
Assets										
Property, plant and equipment	25%	25%	25%	23%	27%	28%	28%	28%	29%	29%
Intangible assets	48%	47%	48%	44%	43%	42%	38%	36%	33%	31%
Investments in associates and joint ventures	6%	6%	5%	6%	4%	4%	4%	3%	3%	3%
Other investments and receivables	2%	2%	2%	3%	3%	3%	4%	4%	4%	4%
Advances to customers	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Deferred tax assets	2%	2%	3%	3%	2%	2%	2%	2%	1%	1%
Total non-current assets	**84%**	**83%**	**84%**	**79%**	**80%**	**80%**	**76%**	**73%**	**71%**	**68%**
Inventories	5%	5%	5%	4%	4%	5%	4%	4%	4%	4%
Trade and other receivables	0%	8%	8%	8%	9%	8%	8%	8%	8%	7%
Prepayments	7%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Current tax assets	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cash and cash equivalents	4%	2%	2%	8%	6%	6%	11%	14%	17%	19%
Assets classified as held for sale	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%
Total current assets	**16%**	**17%**	**16%**	**21%**	**20%**	**20%**	**24%**	**27%**	**29%**	**32%**
Total assets	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Equity										
Share capital	7%	7%	6%	6%	6%	6%	5%	5%	4%	4%
Share premium	22%	20%	18%	19%	19%	17%	15%	14%	13%	12%
Reserves	-7%	-3%	-4%	-8%	-15%	-14%	-12%	-11%	-10%	-9%
Retained earnings	70%	68%	70%	74%	81%	83%	85%	86%	87%	88%
Equity attributable to equity holders of the Company	92%	92%	90%	91%	92%	92%	93%	94%	94%	95%
Non-controlling interests	8%	8%	10%	9%	8%	8%	7%	6%	6%	5%
Total equity	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Liabilities										
Loans and borrowings	47%	44%	47%	44%	46%	49%	51%	53%	54%	55%
Tax liabilities	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Employee benefits	6%	7%	6%	6%	5%	6%	6%	6%	6%	5%
Provisions	2%	2%	1%	1%	4%	4%	3%	3%	3%	3%
Deferred tax liabilities	7%	7%	8%	7%	6%	6%	5%	5%	5%	4%
Total non-current liabilities	**62%**	**60%**	**62%**	**58%**	**61%**	**64%**	**65%**	**66%**	**67%**	**68%**
Bank overdrafts and commercial papers	1%	3%	2%	7%	5%	4%	4%	4%	4%	4%
Loans and borrowings	10%	8%	6%	8%	7%	4%	4%	4%	3%	3%
Trade and other payables	24%	26%	27%	25%	25%	26%	25%	25%	24%	24%
Current tax liabilities	2%	2%	2%	1%	1%	1%	1%	1%	1%	1%
Provisions	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%
Liabilities associated with assets classified as held for sale	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%
Total current liabilities	**38%**	**40%**	**38%**	**42%**	**39%**	**36%**	**35%**	**34%**	**33%**	**32%**
Total liabilities	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Total equity and liabilities	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Source: Company data and personal estimates

Appendix 6: Forecasting Assumptions

	2018F	2019F	2020F	2021F	2022F	TV	Assumption
Inflation							
Global	4%	3%	3%	3%	3%		IMF predicted inflation rate
Europe	2%	2%	2%	2%	2%		IMF predicted inflation rate
Americas	3%	3%	3%	3%	3%		IMF predicted inflation rate. This region inflation results from the average of the inflation of 3 regions according to the source: Central America; North America; Latin America and the Caribbean
Africa, Middle East & Eastern Europe	7%	6%	6%	5%	5%		IMF predicted inflation rate. This region inflation results from the average of the inflation of 3 regions according to the source: Africa; Eastern Europe; Middle East
Asia Pacific	3%	3%	3%	3%	3%		IMF predicted inflation rate
Netherlands	3,2%	2,4%	2,1%	2,0%	1,9%	**1,90%**	
Income Statement							
Revenues	6%	6%	6%	7%	7%		
Europe	1%	2%	3%	4%	5%		
Americas	7%	6%	6%	6%	6%		"Revenues" Sheet
Africa, Middle East & Eastern Europe	12%	11%	11%	10%	10%		
Asia Pacific	12%	11%	11%	10%	10%		
Head Office and Other/eliminations	3%	3%	3%	3%	3%		
Other income	-100%	-103%	-107%	-110%	-114%		To the forecasted period it is not predicted the selling of PP&E or intangible assets. So the company will not have gains on that.
Raw materials, consumables and services	-63%	-63%	-63%	-63%	-63%		Based on the average percentage of total revenues during the period 2013-
Personnel expenses	-16%	-16%	-16%	-16%	-16%		Based on the average percentage of total revenues during the period 2013-
Amortisation, depreciation and impairments	-3%	-49%	5%	5%	5%		Sum of amortization, depreciation and impairments of PP&A and intangible assets
Interest income	0%	0%	0%	0%	0%		Equal to Interest Received
Interest expenses	13%	3%	-7%	-5%	-6%		Equal to Interest Paid
Other net finance income/(expenses)	-26%	0%	0%	0%	0%		Equal to the 5Y historical average
Share of profit of associates and joint ventures and impairments thereof (net of income tax)	0%	0%	0%	0%	0%		The decrease in 2017 was mainly due to the acquisition in 2017 of all the remaining shares in Lagunitas Brewing Company. Due to that, the value is expected to increase again. It is assumed therefore the 4Y historical nominal average of the period 2013-2016.
Income tax rate	28%	28%	28%	28%	28%	**28%**	To cumpute the income tax rate, the company uses "Profit before income tax excluding share of profit of associates and joint ventures (including impairments thereof)". Then, it applies a rate in which the principal factor is the domestic tax rate (25%), added to other variables. To reach a future tax rate, the 25% of the domestic tax rate will be fixed, and will be added to the 5Y average of the remaining value (3,2%). So the predicted income tax rate for the forecasted period will be 28,2%
Income tax rate - the variable factors							
Income tax expense	9%	35%	8%	8%	8%		"Profit before income tax excluding share of profit of associates and joint ventures (including impairments thereof)" * "Income tax rate"
Equity holders of the Company (net profit)	1%	37%	9%	8%	9%		Net Income - Non-controlling interests
Non-controlling interests	0%	0%	0%	0%	0%		Equal to the nominal value of 2017
Balance sheet							
Property, plant and equipment	5%	11%	10%	10%	9%		PP&En-1+ CapEx on PP%E - dep. and impairment losses on PP&E
Cost of property, plant and equipment	22 597	23 891	25 260	26 707	28 238		YOY% growth based on the average historical growth
CapEx on PP&E	6%	6%	6%	6%	6%		Based on the 5Y historical average growth
YOY% Cost of property, plant and equipment							
Accumulated Depreciation and Impairments losses of PP&E	11 535	12 196	12 895	13 634	14 415		Based on the historal average in % of Cost of PP&E.
% accumulated depreciation and Impairments losses of PP&E							
Depreciation and Imparments on PP&E	1 280	661	699	739	781		Accumulated dep. And impairments PP&E n - Accumulated dep. And impairments PP&E n-1
Intangible assets	-1%	0%	1%	1%	1%		Intangibles n-1 + CapEx on intangibles - amort. And impairments on intangi
Cost of intangible assets	21 352	22 227	23 138	24 086	25 073		YOY% growth based on the average historical growth
CapEx on Intangible Assets	20%	20%	20%	20%	20%		Based on the 5Y historical average growth
YOY% accumulated cost of intangible assets							
Accumulated Amortization and Impairments of intagible Assets	3 096	3 223	3 355	3 493	3 636		14,5% of total intangible cost because the tendency of the historical values shows that it will continue to grow slowly, being no reasonable to perform an average rate.
% Amortization and Impairments of intagible Assets							
Amortisation and impairments on Intangible Assets	254	127	132	137	143		Accumulated amort. And impairments n intangibles - Accumulated amort. And impairments intangibles n-1
Sum of accumulated amortization depreciation of PPE and intangible assets	14 631	15 419	16 250	17 126	18 050		
Amortisation, depreciation and impairments	1 534	788	831	876	924		Sum of amortization, depreciation and impairments of PP&A and intangible assets
Investments in associates and joint ventures	-3%	-3%	-3%	-3%	-4%		"Investments in associates and joint ventures" n-1 + Dividends Received n + Share of profit of associates and joint ventures n
Other investments and receivables	23%	19%	16%	14%	12%		"Other investments and receivables" n-1 + Loans issued to customers and other investments n
Advances to customers	19%	-5%	19%	-4%	18%		Based on the historical average Accounts Receivable turnover
Deferred tax assets	0%	0%	0%	0%	0%		Equal to the nominal value of 2017
Total non-current assets							

Inventories	5%	6%	7%	6%	7%	Based on the historical average Inventory turnover
Trade and other receivables	-3%	6%	6%	7%	7%	Based on the historical 4Y average in % of revenues.
% of revenues of trade and other receivables						
Prepayments	-3%	6%	6%	7%	7%	Based on the historical average in percentage of revenues (excluding 2013)
% of revenues						
Current tax assets	0%	0%	0%	0%	0%	Equal to the nominal value of 2017
Cash and cash equivalents	5%	90%	40%	32%	26%	"Cash Flow Statement"
Assets classified as held for sale	-100%	0%	0%	0%	0%	HEINEKEN expects to sell the remaining assets held for sale during 2018.
Total current assets						
Equity						
Share capital	0%	0%	0%	0%	0%	Equal to the nominal value of 2017
Share premium	0%	0%	0%	0%	0%	Equal to the nominal value of 2017
Reserves	0%	0%	0%	0%	0%	Based on the predicted inflation
Retained earnings	10%	14%	12%	11%	11%	Based on a 5Y historical average of payout ratio
Equity attributable to equity holders of the Company	0%	0%	0%	0%	0%	
Non-controlling interests	8%	12%	10%	10%	10%	Equal to the nominal value of 2017
Liabilities						
Loans and borrowings	4%	13%	11%	11%	10%	"Loans and borrowings" sheet
Tax liabilities	0%	0%	0%	0%	0%	Equal to the nominal value of 2017
Employee benefits	18%	6%	6%	7%	7%	Equal to the 5Y historical average, in % of personnel expenses
in % of personnel expenses						
Provisions	0%	0%	0%	0%	0%	Equal to the nominal value of 2017
Deferred tax liabilities	0%	0%	0%	0%	0%	Equal to the nominal value of 2017
Total non-current liabilities						
Bank overdrafts and commercial papers	-27%	12%	10%	10%	10%	"Loans and borrowings" sheet
in % of total debt of bank overdrafts and commercial papers						
Loans and borrowings	-40%	0%	0%	-12%	4%	"Loans and borrowings" sheet
Trade and other payables	-3%	6%	6%	7%	7%	Based on the historical average in % of revenues
% of revenues of trade and other payables						
Current tax liabilities	0%	0%	0%	0%	0%	Equal to the nominal value of 2017
Provisions	0%	0%	0%	0%	0%	Equal to the nominal value of 2017
Liabilities associated with assets classified as held for sale	-100%	0%	0%	0%	0%	HEINEKEN expects to sell the remaining assets held for sale during 2018.

Cash Flow Statement						
Operating activities						
Amortisation, depreciation and impairments	-3%	-49%	5%	5%	5%	Equal to Amortisation, depreciation and impairments of Income Statement
Net interest expenses	14%	4%	-8%	-6%	-7%	Interest Expenses + Other net finance income/(expenses) - Interest Income
Gain on sale of property, plant and equipment, intangible assets and subsidiaries, joint ventures and associates	-100%	0%	0%	0%	0%	To the forecasted period it is not predicted the selling of PP&E or intangible assets. So the company will not have gains on that.
Investment income and share of profit and impairments of associates and joint ventures and dividend income on available-for-sale and held-for-trading investments	-11%	0%	0%	0%	0%	Equal to "share of profit of associates and joint ventures and impairments thereof (net of income tax)" of Income Statement
Income tax expenses	9%	35%	8%	8%	8%	"Profit before income tax excluding share of profit of associates and joint ventures (including impairments thereof)" * "Income tax rate"
Other non-cash items	-100%	0%	0%	0%	0%	In order to prepare the cash flow statement, the company had eliminated this item. So, to the forecasted period, its nominal value is 0.
Cash flow from operations before changes in working capital and provisions						
Change in inventories	-47%	20%	15%	1%	22%	
Change in trade and other receivables	-119%	-541%	57%	-17%	42%	
Change in trade and other payables	-104%	2038%	18%	8%	12%	
Change in provisions and employee benefits	-282%	0%	0%	0%	0%	
Cash flow from operations						
Interest paid	13%	3%	-7%	-5%	-6%	"Loans and borrowings" sheet
Interest received	-27%	0%	0%	0%	0%	Equal to Interes Income of Income Statement
Dividends received	21%	0%	0%	0%	0%	Equal to the 5Y historical average
Income taxes paid	9%	35%	8%	8%	8%	Equal to "Income tax expenses", since it was assumed no changes for deffered tax
Investing activities						
Proceeds from sale of property, plant and equipment and intangible assets	-100%	0%	0%	0%	0%	No proceeds from sale of property, plant and equipment and intangible assets are expected during the forecasted period
Purchase of property, plant and equipment	-6%	-6%	-6%	-6%	-6%	Equal to CapEx of PP&A
Purchase of intangible assets	20%	20%	20%	20%	20%	Equal to CapEx of Intangibles
Loans issued to customers and other investments	0%	0%	0%	0%	0%	Equal to the nominal value of 2017
Repayment on loans to customers	-100%	0%	0%	0%	0%	No repayments are predicted during the forecasted period
Cash flow (used in)/from operational investing activities						
Free operating cash flow						
Acquisition of subsidiaries, net of cash acquired	-100%	0%	0%	0%	0%	No acquisitions of subsidiaries, additions to associates, joint ventures and other investmens are expected during the forecasted period
Acquisition of/additions to associates, joint ventures and other investments	-100%	0%	0%	0%	0%	
Disposal of subsidiaries, net of cash disposed of	-100%	0%	0%	0%	0%	No disposals of subsidiaries, additions to associates, joint ventures and other investmens are expected during the forecasted period
Disposal of associates, joint ventures and other investments	-100%	0%	0%	0%	0%	
Financing activities						
Proceeds from loans and borrowings	-48%	67%	-3%	4%	0%	Sum of Short term loans plus the increase on long term loans
Repayment of loans and borrowings	-39%	-40%	0%	0%	-12%	Sum of Short term loans n-1
Dividends paid	0%	1%	34%	8%	8%	Based on a 5Y historical average of payout ratio
Purchase own shares and shares issued	0%	0%	0%	0%	0%	No purchase of own shares and shares issued are expected during the fore
Acquisition of non-controlling interests	-100%	0%	0%	0%	0%	No acquisitions of non-controlling interests are expected during the forecasted period
Other	0%	0%	0%	0%	0%	
Effect of movements in exchange rates	-100%	0%	0%	0%	0%	It can not be predicted for the forecasted period

Appendix 7: Revenues Forecast

(In millions of €)

	Historical Statements					Projected Stetements				
Period Reference	1	2	3	4	5	6	7	8	9	10
End of Period	**2013***	**2 014**	**2 015**	**2 016**	**2 017**	**2018F**	**2019F**	**2020F**	**2021F**	**2022F**
Revenue	**19 203**	**19 257**	**20 511**	**20 792**	**21 888**	**23 136**	**24 486**	**26 073**	**27 784**	**29 692**
Europe	9 004	9 761	10 227	10 112	10 207	**10 317**	**10 491**	**10 840**	**11 267**	**11 826**
Americas	4 495	4 631	5 159	5 203	6 258	**6 677**	**7 109**	**7 548**	**8 007**	**8 497**
Africa, Middle East & Eastern Europe	4 103	3 189	3 263	3 203	3 059	**3 433**	**3 825**	**4 248**	**4 680**	**5 126**
Asia Pacific	2 037	2 088	2 483	2 894	3 005	**3 373**	**3 747**	**4 146**	**4 561**	**4 999**
Head Office and Other/eliminations	436	412	621	620	641	**663**	**686**	**709**	**731**	**755**
Consolidated beer volume (in millions of hect	**178,3**	**181,3**	**188,3**	**200,1**	**218,0**	**223,9**	**230,3**	**237,8**	**245,7**	**254,3**
Europe	60,4	59,7	76,6	78,6	78,8	78,0	77,6	78,4	79,6	81,6
	50,1	52,0	56,0	58,7	72,1	74,5	76,9	79,3	81,7	84,2
Americas										
Americas yoy%		3,85%	7,62%	4,82%	AVERAGE	5,43%				
Africa, Middle East & Eastern Europe	47,1	47,6	35,9	38,4	40,1	42,1	44,2	46,4	48,5	50,5
Africa, Middle East & Eastern Europe yoy%				6,96%	4,43%	AVERAGE	5,70%			
Asia Pacific	20,7	21,9	19,8	24,4	27,0	29,3	31,5	33,7	35,9	38,1
Asia Pacific yoy%		6,07%	-9,74%	23,23%	10,66%	AVERAGE	7,55%			
Consolidated beer volume yoy%										
Europe		-1,17%	28,23%	2,61%	0,25%	-1,00%	-0,50%	1,00%	1,50%	2,50%
Americas		3,85%	7,62%	4,82%	22,83%	3,35%	3,23%	3,09%	3,06%	3,03%
Africa, Middle East & Eastern Europe		1,10%	-24,57%	6,96%	4,43%	5,00%	5,00%	5,00%	4,50%	4,00%
Asia Pacific		6,07%	-9,74%	23,23%	10,66%	8,55%	7,55%	7,00%	6,50%	6,00%
Average selling price by hectolitre (in €)										
Europe	149,0	163,4	133,5	128,7	129,5	132	135	138	142	145
Americas	89,7	89,0	92,1	88,6	86,8	90	92	95	98	101
Africa, Middle East & Eastern Europe	87,2	67,0	90,9	83,4	76,3	82	87	92	96	102
Asia Pacific	98,5	95,2	125,4	118,6	111,3	115	119	123	127	131

Segment Influence on total Revenues	**2013***	**2 014**	**2 015**	**2 016**	**2 017**	**2018F**	**2019F**	**2020F**	**2021F**	**2022F**
Europe	46,9%	50,7%	49,9%	48,6%	46,6%	44,6%	42,8%	41,6%	40,6%	39,8%
Americas	23,4%	24,0%	25,2%	25,0%	28,6%	28,9%	29,0%	28,9%	28,8%	28,6%
Africa, Middle East & Eastern Europe	21,4%	16,6%	15,9%	15,4%	14,0%	14,8%	15,6%	16,3%	16,8%	17,3%
Asia Pacific	10,6%	10,8%	12,1%	13,9%	13,7%	14,6%	15,3%	15,9%	16,4%	16,8%
Head Office and Other/eliminations	-2,3%	-2,1%	-3,0%	-3,0%	-2,9%	-2,9%	-2,8%	-2,7%	-2,6%	-2,5%

Source: Company data and personal estimates

Appendix 8: Loans and Borrowings Assumptions

(In millions of €)

	Historical Statements					Projected Stetements					
Period Reference	1	2	3	4	5	6	7	8	9	10	
End of Period	**2013***	**2 014**	**2 015**	**2 016**	**2 017**	**2018F**	**2019F**	**2020F**	**2021F**	**2022F**	**Assumption**
Debt	12 226	11 765	12 597	14 604	15 513	14 916	16 694	18 389	20 204	22 171	
Non-current Loans and Borrowings	9 853	9 499	10 658	10 954	12 301	12 831	14 505	16 089	17 926	19 729	Predicted as the sum of the non-current loans and borrowings of the previous year, plus the proceeds from loans and borrowings, minus the repayments of loans and borrowings. It is assumed the total amount of proceeds of loans and borrowings are added to non-current liabilities.
Current Bank overdrafts and commercial pa	178	595	542	1 669	1 265	926	1036	1141	1254	1376	Based on the historical average % percentage of non-current and current loans and borrowings
Current Loans and Borrowings	2 195	1 671	1 397	1 981	1 947	1159	1153	1158	1024	1066	Predicted as the sum of the loans and borrowings repayments that will be made in the throught the following year
Equity	12 356	13 452	15 070	14 573	14 521	15 685	17 567	19 341	21 250	23 318	
Debt-to-value ratio	49,74%	46,66%	45,53%	50,05%	51,65%	48,74%	48,73%	48,74%	48,74%	48,74%	
				Average = 48,73%							
Proceeds from loans and borrowings	1 663	858	1 888	1 670	3 268	1689	2827	2742	2861	2869	The company has a debt-to-equity policy of keeping it constant. In the past 5 years, this ratio reach is highest on years in which the investments were high. Based on that, the proceeds from loans and borrowing will be predicted in order to the debt-to-equity ratio equal the historical average, of 48,73%. This value makes sense since 2017 was one of the years with high investments, being predictable that the ratio decreases again. Note that "goal seek function can not reach a value for the average 48,73%. Due to that, it will be assumed for the period 2018-2022 debt-to-equity ratios of 48,74%, 48,73%, 48,74%, 48,74% and 48,74%, respectively.
Repayment of loans and borrowings	-2 474	-2 443	-1 753	-1 001	-3 205	-1243	-1159	-1153	-1158	-1024	Sum of the repayments predicted in each year. Repayments predicted to be paid along a period of years are counted for each year by the average per year. The ones that have "various" written on their repayment date are summed for each year as they were by from 2018 until 2028 (10 years)
Interest paid	557	522	446	441	463	432	448	412	387	360	The forecasted interest paid will be the sum of the nominal interest rates, multiplied by their face value for each year. For the bonds/bank loans/ interest bearing liabilities/ deposits from third parties that do not have a defined nominal interest rate, it will be assumed that their nominal interest rate is equal to the average Rd in the period 2013-2017 (Interest paid / (Current loans and borrowings + Non-current loans and borrowings)), which is 3,93%. For the proceeds of loans and borrowings, it will be assumed the same rate of 3,93%.
Kd	4,62%	4,67%	3,70%	3,41%	3,25%	**3,08%**	**2,86%**	**2,39%**	**2,04%**	**1,73%**	
				Average =	**3,93%**						

Source: Company data and personal estimates

Appendix 9: Interests Computations

#	In millions of €	Category	Nominal interest rate %	Repayment	Carrying amount 2017	Face value 2017	Interest Paid 2018	Interest Paid 2019	Interest Paid 2020	Interest Paid 2021	Interest Paid 2022
1	Unsecured bond	issue under EMTN programme	1,40%	2017	-	-	0	0	0	0	0
2	Unsecured bond	issue under EMTN programme	1,30%	2018	100	100	1	0	0	0	0
3	Unsecured bond	issue under EMTN programme	2,20%	2018	59	59	1	0	0	0	0
4	Unsecured bond	issue under EMTN programme	2,50%	2019	167	167	4	4	0	0	0
5	Unsecured bond	issue under EMTN programme	2,50%	2019	848	850	21	21	0	0	0
6	Unsecured bond	issue under EMTN programme	2,10%	2020	998	1000	21	21	21	0	0
7	Unsecured bond	issue under EMTN programme	2,00%	2021	498	500	10	10	10	10	0
8	Unsecured bond	issue under EMTN programme	1,30%	2021	498	500	7	7	7	7	0
9	Unsecured bond	issue under EMTN programme	3,30%	2022	166	167	6	6	6	6	6
10	Unsecured bond	issue under EMTN programme	1,60%	2022	93	94	2	2	2	2	2
11	Unsecured bond	issue under EMTN programme	1,70%	2023	140	140	2	2	2	2	2
12	Unsecured bond	issue under EMTN programme	3,50%	2024	498	500	18	18	18	18	18
13	Unsecured bond	issue under EMTN programme	1,50%	2024	455	460	7	7	7	7	7
14	Unsecured bond	issue under EMTN programme	2,90%	2025	744	750	22	22	22	22	22
15	Unsecured bond	issue under EMTN programme	2,00%	2025	224	225	5	5	5	5	5
16	Unsecured bond	issue under EMTN programme	1,00%	2026	791	800	8	8	8	8	8
17	Unsecured bond	issue under EMTN programme	1,40%	2027	496	500	7	7	7	7	7
18	Unsecured bond	issue under EMTN programme	3,50%	2029	200	200	7	7	7	7	7
19	Unsecured bond	issue under EMTN programme	1,50%	2029	790	800	12	12	12	12	12
20	Unsecured bond	issue under EMTN programme	2,00%	2032	499	500	10	10	10	10	10
21	Unsecured bond	issue under EMTN programme	3,30%	2033	177	180	6	6	6	6	6
22	Unsecured bond	issue under EMTN programme	2,60%	2033	92	100	3	3	3	3	3
23	Unsecured bond	issue under EMTN programme	3,50%	2043	75	75	3	3	3	3	3
24	Unsecured bond	issue under APB MTN programme	3,90%	2020-2022	24	25	1	1	1	1	0
25	Unsecured bond	issue under 144A/RegS	1,40%	2017	-	-	0	0	0	0	0
26	Unsecured bond	issue under 144A/RegS	3,40%	2022	623	625	21	21	21	21	21
27	Unsecured bond	issue under 144A/RegS	2,80%	2023	831	834	23	23	23	23	23
28	Unsecured bond	issue under 144A/RegS	3,50%	2028	906	917	32	32	32	32	32
29	Unsecured bond	issue under 144A/RegS	4,00%	2042	408	417	17	17	17	17	17
30	Unsecured bond	issue under 144A/RegS	4,40%	2047	533	542	24	24	24	24	24
31	Unsecured bond	various	3,75%	2020	15	15	1	1	1	0	0
32	Unsecured bank loans	bank facilities	2,50%	2019	24	24	1	1	0	0	0
33	Unsecured bank loans	bank facilities	20,00%	2021	20	20	4	4	4	4	0
34	Unsecured bank loans	bank facilities	8,85%	2018-2022	21	21	2	1	1	1	0
35	Unsecured bank loans	bank facilities	9,65%	2018-2022	170	170	16	13	10	7	3
36	Unsecured bank loans	various	3,93%	various	16	16	1	1	1	0	0
37	Secured bank loans	bank facilities	9,50%	2017	-	-	0	0	0	0	0
38	Secured bank loans	bank facilities	0,1	2026	83	83	6	6	6	6	6
39	Secured bank loans	various	3,93%	various	26	26	1	1	1	1	1
40	Other interest-bearing liabilities	2008 US private placement	2,80%	2017	-	-	0	0	0	0	0
41	Other interest-bearing liabilities	2008 US private placement	7,20%	2018	36	36	0	0	0	0	0
42	Other interest-bearing liabilities	2010 US private placement	4,60%	2018	605	605	0	0	0	0	0
43	Other interest-bearing liabilities	2008 US private placement	6,30%	2018	325	325	0	0	0	0	0
44	Other interest-bearing liabilities	facilities from JVs	3,93%	various	4	4	0	0	0	0	0
45	Other interest-bearing liabilities	bank facilities	6,70%	2020 - 2026	85	85	6	6	6	6	6
46	Other interest-bearing liabilities	various	3,93%	various	101	101	4	4	3	3	2
47	Deposits from third parties	n.a	3,93%	various	649	649	26	23	20	18	15
					14 113	14207					
						Total	365	356	323	294	267

Note:

The nominal interest rate assumed for the bond #24 is **3,9%** (average between 3,8% and 4%),
For the bond #31 is **3,75%**,
For the bank loan #34 is **8,85%**,
For the bank loan #35 is **9,65%**,
For the other interest-bearing liabilitie #45 is **6,7%**

Source: Company data and personal estimates

Appendix 10: WACC Assumptions

	2018F	2019F	2020F	2021F	2022F	TV
Market Risk Premium	5,08%	5,08%	5,08%	5,08%	5,08%	5,08%
Country Risk Premium	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Risk Free	-0,05%	-0,05%	-0,05%	-0,05%	-0,05%	3,91%
Beta	0,734	0,734	0,734	0,734	0,734	0,734
Ke	3,68%	3,68%	3,68%	3,68%	3,68%	7,63%
Corporate Tax rate (Tc)	28,2%	28,2%	28,2%	28,2%	28,2%	28,2%
Terminal growth rate	-	-	-	-	-	1,90%
Kd	3,08%	2,86%	2,39%	2,04%	1,73%	3,93%
Weight of Debt = D/(E+D)	48,74%	48,73%	48,74%	48,74%	48,74%	48,74%
Weight of Equity = E/(E+D)	51,3%	51,3%	51,3%	51,3%	51,3%	51,3%
WACC	**2,96%**	**2,89%**	**2,72%**	**2,60%**	**2,49%**	-
Long-Term WACC	-	-	-	-	-	**5,29%**

	Assumption / Source
Market Risk Premium	Aswath Damodaran´s computations on January 1, 2018
Country Risk Premium	Aswath Damodaran´s computations on January 1, 2018
Risk Free	For the forecasted period 2018-2022.: 5Y average (03/01/2014 to 16/08/2018) yield of German bund with 10Y maturity For the Terminal Value: 5Y average (period before crisis - 31/12/2002 to 31/12/2007) yield of German bund with 10Y maturity. - Source bloomerg August 16, 2018
Beta	The Beta is computed using daily data and throught a linear regression between the AEX Index and Heineken´s stock,ending in a beta of 0,734
Ke	Computed by the CAPM model
Corporate Tax rate (Tc)	Used on personal assumptions
Terminal growth rate	Based on the forecasted Real GDP growth rate for Netherlands for 2022. Source: IMF World Economic Outlook 2018
Kd	Cost of debt during the the forecasted period 2017-2022. Based on the average cost of debt during the the forecasted period for the Terminal Value
Weight of Debt = D/(E+D)	Student´s assumptions
Weight of Equity = E/(E+D)	Student´s assumptions
WACC	WACC method
Long-Term WACC	WACC method

Source: Company data and personal estimates

Appendix 11: Discounted Cash Flow Computations

	2 017	2018F	2019F	2020F	2021F	2022F	Terminal Value
Revenues	21 888	23 136	24 486	26 073	27 784	29 692	30 256
Growth Rate		5,7%	5,8%	6,5%	6,6%	6,9%	1,9%
EBITDA		4 915	5 202	5 539	5 902	6 308	6 428
EBITDA/Sales		21,24%	21,24%	21,24%	21,24%	21,24%	21,24%
D&A		1 534	788	831	876	924	975
D&A YOY%				5%	5%	5%	5,47%
EBIT		3 381	4 414	4 708	5 026	5 383	5 453
EBIT/Sales		14,61%	18,03%	18,06%	18,09%	18,13%	18,02%
CAPEX		1 956	2 090	2 236	2 395	2 571	2 753
CAPEX YOY%			6,8%	7,0%	7,1%	7,3%	7,1%
Working Capital Requirements	69	73	71	5	93	9	22
Trading Cycle		0,0032	0,0029	0,0002	0,0034	0,0003	0,00072
Increase of WCR		142	144	66	88	84	13
Tax expense		826	1 113	1 206	1 303	1 411	1 538
EBIT*(1-Tc)		2 427	3 169	3 380	3 609	3 865	3 915
FFCF		**2 148**	**1 724**	**2 041**	**2 001**	**2 303**	**2 124**

Terminal Value	**62 696**
PV of TV	55 439
PV of FCFF	9 440
Enterprise Value	64 879
Net Debt (-)	13 271
Minority interests (-)	1 200
Associates (+)	1 784
Equity Value	52 193
Number of shares	570 074 335
Price at December 2017	86,93
Price target	**91,55**
Upside Potential	5,32%

Source: Company data and personal estimates

Appendix 12: Adjusted Present Value Computations

Note that on these computations, the value of the FCFF in 2022 is the sum of the FCFF computed previously for 2021 plus the terminal value, which means that the perpetuity is included on the valuation period (2018F-2022F).

	2017	2018F	2019F	2020F	2021F	2022	TV
FCFF		2 148	1 724	2 041	2 001	65 000	2 124
PVt	63 528	63 450	63 853	63 697	63 420		
Debt Capacity Short-term	30 966	30 917	31 121	31 045	30 910	0	
Interes Paid Short-term		955	884	744	634	535	
Interest Tax Shield Short-term		32	29	23	18	15	

EV Unlevered	64 158
PV (ITS)	108
Enterprise Vlue	64 267
Net Debt (-)	13 271
Minority interests (-)	1 200
Associates (+)	1 784
Equity Value	51 580
Number of shares	570 074 335
Price at December 2017	86,93
Price target	**90,48**
Upside Potential	4%

Source: Company data and personal estimates

Appendix 13: Free Cash Flow to Equity Computations

	2 017	2018F	2019F	2020F	2021F	2022F	TV
FCF		2 148	1 724	2 041	2 001	65 000	2 124
Interest Pyaments * (1-Tc)		923	855	721	616	520	
Net Borrowing	30 966	49	204	76	135	30 910	
FCFE	30 966	1 176	1 073	1 245	1 250	33 569	

Entrerprise Value	63 320
Net Debt (-)	13 271
Minority interests (-)	1 200
Associates (+)	1 784
Equity Value	50 633
Number of shares	570 074 335
Price at December 2017	86,93
Price target	**88,82**
Upside Potential	2%

Source: Company data and personal estimates

Appendix 15: Dividend Discount Model Computations

In order to have more models to support the recommendation made through the principle methods, Discounted Cash Flow was computed, knowing that probably, the results would not be trustful, since the forecasts made for Heineken N.V. does not predict a stable growth of dividends, and the model cannot be applied to this company with reliability. However, the results obtained do not support the hold recommendation, and instead, a selling recommendation is given. Also, these results are not so unpredictable, since the firm payout ratio is predicted to be 47% from 2018 to 2022.

Note that the perpetuity value was computed through Gordon´s Growth Model, in which the value of dividends per share of 2022F was assumed to grow at the forecasted terminal growth rate (1,9%), and discounted at the percentage of 5,73% resulted from the cost of equity subtracted to terminal growth rate.

	2018F	2019F	2020F	2021F	2022F	TV
Dividends Per Share	1,78	1,80	2,41	2,60	2,81	49,87
PV of dividends	53,69	53,81	53,92	53,41	52,68	

Price target	**53,69**
Upside Potential	-38,2%

Source: Company data and personal estimates

Appendix 16: Comparable´ Data

A complementary relative valuation is performed to assess the value achieved when Heineken N.V. is compared among its peers. For a most accurate valuation, the peer group is fundamental. To get these peers, it was used the peers that were considered by both Heineken N.V. and Financial Times.

It can be consulted on the tables below the peers considered for this valuation. All of them belong to beverage industry (except Heineken Holding) and have betas above 1, and except Coca-Cola and Pepsi Co, all of them also have as main operations the selling of alcoholic drinks.

The ratios chosen were EV / Revenues, EV / EBITDA, EV / EBIT and Price-to-Earnings, which led to the computations below.

Exchange Rate on August, 18	
USD/EUR	0,87
GBP/EUR	1,11
DKK/EUR	0,13

Company Name	Exchange: Ticker	Country	Industry	Beta
Heineken NV	**(HEIA:AEX)**	**Netherlands**	**Beverages**	**0,734**
Anheuser Busch InBev NV	(ABI:BRU)	Belgium	Beverages	0,980
Carlsberg A/S	(CARL B:CPH)	Denmark	Beverages	0,757
Diageo PLC	(DGE:LSE)	United Kingdom	Beverages	0,919
Pernod Ricard SA	(RI:PAR)	France	Beverages	0,779
Heineken Holding NV	(HEIO:AEX)	Netherlands	Beverages	0,709
Coca-Cola	(KO:NYQ)	USA	Beverages	0,784
PepsiCo	(PEP:NSQ)	USA	Beverages	0,705

Source: Financial Times	Closing Information August, 17, 2018					Revenues			EBITDA		
Company	Share Price (€)	Shares Outsanding (millions)	Equity Market Value	Net Debt	Enterprise Value (EV)	2015	2016	2017	2015	2016	2017
ABI	86,97	1 690	146 979	104 723	251 702	37 935	39 600	49 106	14 840	13 886	18 289
CARL B	106	153	16 150	20 727	36 877	8 757	8 757	8 757	598	1 780	1 188
DGE	31	2 460	76 129	9 158	85 287	12 002	11 638	13 376	4 007	3 815	4 373
RI	139,2	265	36 946	7 868	44 814	8 558	8 628	9 010	1 804	2 314	2 451
HEIO	84	288	24 137	12 936	37 073	20 511	20 792	21 908	4 669	4 572	4 939
KO	40,21	4 250	170 898	27 010	197 908	38 497	36 421	30 807	8 432	7 966	9 837
PEP	99,40	1 410	140 150	19 771	159 921	54 859	54 635	55 267	9 369	10 573	11 204

Source: Financial Times	EBIT			Net Income			EPS			Share Closing Price		
Company	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017
ABI	12 096	10 861	14 569	7 198	1 080	6 957	4,26	0,64	4,12	140,80	100,25	93,20
CARL B	29	1 144	574	392	601	169	2,57	3,94	1,11	81,07	81,67	99,78
DGE	3 519	3 290	3 973	2 643	2 491	2 955	1,07	1,01	1,20	20,54	23,50	30,30
RI	1 590	2 095	2 232	861	1 235	1 393	3,24	4,65	5,25	103,60	103,10	132,50
HEIO	3 075	2 755	3 352	957	779	977	3,32	2,70	3,39	70,49	65,65	82,05
KO	6 718	6 411	8 741	6 395	5 678	1 086	1,50	1,34	0,26	36,77	36,84	39,94
PEP	7 267	8 513	9 143	4 743	5 506	4 226	3,36	3,91	3,00	85,75	91,30	104,34

Source: Financial Times	EV / Revenues			EV / EBITDA			EV / EBIT			Price to Earnings		
Company	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017
ABI	6,64	6,36	5,13	16,96	18,13	13,76	20,81	23,17	17,28	33,06	156,92	22,64
CARL B	4,21	4,21	4,21	61,72	20,72	31,03	-1280,01	32,23	64,19	-31,54	20,73	90,23
DGE	7,11	7,33	6,38	21,28	22,36	19,50	24,24	25,92	21,47	19,11	23,21	25,23
RI	5,24	5,19	4,97	24,84	19,37	18,28	28,19	21,39	20,08	31,94	22,16	25,25
HEIO	1,81	1,78	1,69	7,94	8,11	7,51	12,06	13,46	11,06	21,22	24,27	24,19
KO	5,14	5,43	6,42	23,47	24,85	20,12	29,46	30,87	22,64	24,43	27,57	156,34
PEP	2,92	2,93	2,89	17,07	15,13	14,27	22,01	18,79	17,49	25,49	23,38	34,82

Source: Bloomberg	EV / Revenues	EV / EBITDA	EV / EBIT	Price to Earnings
Company	2018 FY	2018 FY	2018 FY	2018 FY
ABI	5,65	13,83	16,77	There are no forecasts for P/E ratios
CARL B	2,32	10,48	15,48	
DGE	5,88	16,32	18,12	
RI	4,93	17,07	18,76	
HEIO	There are no forecasts to HEIO			
KO	7,07	19,79	22,21	
PEP	2,81	13,81	16,81	

Source: Company data and personal estimates

Appendix 17: Relative Valuation

To get the price target for 2018F, it was used other investors predictions for the ratios assumed as multiples. Since there were no predictions available for Price to Earnings, this ratio was discarded. Heineken Holding was discarded as well, since there were no predictions available for this company.

The results obtained do not support the hold recommendation and are not aligned with the natural course of the business predicted with other methods. As consequence of the existence of values considered outliers among peers, the usage of the average value for each ratio led to biased results.

Through this method, the price target reached for the year ending 2018F was €170,58/sh, €135,30/sh and €136,67/sh, by the EV / Revenues, EV / EBITDA, EV / EBIT, respectively, all of them strong buy recommendations.

Heineken N.V.	Revenues				EBITDA				EBIT			
	2015	2016	2017	2018F	2015	2016	2017	2018F	2015	2016	2017	2018F
	20 511	20 792	21 888	23 136	4 915	5 202	5 539	5 902	3 381	4 414	4 708	5 026

Heineken N.V.	EPS			Share Closing Price			Price to Earnings		
	2015	2016	2017	2015	2016	2017	2015	2016	2017
	3,32	2,70	3,39	78,50	71,01	86,93	23,65	26,29	25,61

	Estimated EV of Heineken N.V. based on:											
	2015	2016	2017	**2018F**	2015	2016	2017	**2018F**	2015	2016	2017	**2018F**
ABI	136 091	132 157	112 191	**130 717**	83 366	94 291	76 230	**81 631**	70 345	102 295	81 341	**84 288**
CARL B	86 371	87 554	92 169	**53 675**	303 343	107 782	171 894	**61 858**	4 327 327	142 244	302 239	**77 804**
DGE	145 748	152 366	139 566	**136 039**	104 610	116 290	108 019	**96 328**	81 942	114 426	101 077	**91 073**
RI	107 407	107 995	108 868	**114 060**	122 096	100 743	101 277	**100 755**	95 286	94 423	94 532	**94 290**
HEIO	37 073	37 073	37 039	-	39 026	42 180	41 577	-	40 759	59 399	52 072	-
KO	105 446	112 982	140 613	**163 570**	115 359	129 241	111 438	**116 809**	99 592	136 263	106 601	**111 630**
PEP	59 793	60 860	63 336	**65 012**	83 894	78 680	79 063	**81 513**	74 396	82 922	82 353	**84 489**

Peers	2015	2016	2017	2018F	2015	2016	2017	2018F	2015	2016	2017	2018F
Max	145 748	152 366	140 613	163 570	303 343	129 241	171 894	116 809	99 592	142 244	302 239	111 630
Min	37 073	37 073	37 039	53 675	39 026	42 180	41 577	61 858	4 327 327	59 399	52 072	77 804
Average	96 847	98 712	99 112	**110 512**	121 671	95 601	98 500	**89 815**	552 144	104 567	117 174	**90 596**
Median	105 446	107 995	108 868	122 388	104 610	100 743	101 277	88 979	74 396	102 295	94 532	87 781
% range between Average and Median	-8%	-9%	-9%	-10%	16%	-5%	-3%	1%	-842%	2%	24%	3%

Heineken N.V.	Based on EV / Revenues	Based on EV / EBITDA	Based on EV / EBIT
Enterprise Value	110 512	89 815	90 596
Net Debt	13271	13271	13271
Minority interests (-)	1 200	1200	1200
Associates (+)	1 784	1784	1784
Equity Value	97 241	77129	77909
Number of shares	570 074 335	570 074 335	570074335
Price at December 2017	86,93	86,93	86,93
Price target	170,58	**135,30**	**136,67**
Upside Potential	96%	56%	57%

Source: Company data and personal estimates

Appendix 17: Sensitivity Analysis

More sensitivity analyzes are presented here to understand the impact on the price target (always considering the DCF model computations as reference), of some variables.

On the table below, it can be seen the impact of changes in Ke, combined with changes on the weight of equity of HEINEKEN´s capital structure.

		Long-term Ke						
	91,55	6,50%	6,80%	7,20%	7,63%	8,00%	8,50%	9,00%
Weight of Equity	46%	127,95	120,86	112,51	104,63	98,73	91,63	85,44
	48%	121,25	114,58	106,71	99,27	93,69	86,98	81,12
	50%	115,20	108,89	101,44	94,40	89,11	82,75	77,19
	51,3%	111,67	105,58	98,37	91,55	86,44	80,28	74,89
	54%	104,67	98,99	92,27	85,90	81,12	75,35	70,31
	57,0%	97,91	92,62	86,36	80,42	75,96	70,57	65,85
	60%	91,92	86,98	81,12	75,56	71,37	66,32	61,89

Importance to see that a change of just 0,4% in Ke, keeping the weight of equity constant, will result on a change of the recommendation.

The next table presents the same analysis, but for the Kd and the respective weight of debt on HEINEKEN´s capital structure.

		Long-term Kd						
	91,55	3%	3,3%	3,93%	4,1%	4,5%	5%	5,5%
Weight of Debt	40%	108,95	105,61	99,19	97,59	94,00	89,85	86,03
	43%	106,43	103,00	96,44	94,81	91,16	86,96	83,10
	46%	104,01	100,51	93,82	92,18	88,48	84,24	80,36
	48,74%	101,90	98,33	91,55	89,89	86,16	81,89	77,99
	50%	100,95	97,36	90,54	88,87	85,13	80,84	76,95
	52%	99,49	95,86	88,98	87,30	83,54	79,24	75,34
	54%	98,06	94,39	87,47	85,78	82,00	77,70	73,80

Like the previous analysis, small changes of 0,6% on Kd will result on changes of the price target, keeping the weight of debt constant.

The table below, for its turns, shows what happen to price target if modifications on COGS on or personnel costs happen (knowing that both are computed as percentage of revenues)

		COGS (% of Revenues)						
	91,55	-61%	-62%	-62%	-62,70%	-63%	-64%	-64%
Personnel Expenses (% of Revenues)	-15,4%	119,89	113,65	107,36	98,51	94,66	88,24	81,77
	-16%	117,83	111,58	105,28	96,40	92,54	86,10	79,61
	-15,8%	115,77	109,50	103,18	94,29	90,42	83,96	77,45
	-16,06%	113,11	106,82	100,48	91,55	87,67	81,19	74,66
	-16,5%	108,52	102,19	95,82	86,84	82,93	76,41	69,83
	-16,7%	106,43	100,09	93,70	84,69	80,77	74,24	67,64
	-17,0%	103,29	96,93	90,51	81,47	77,53	70,96	64,34

Although both of these items registered a constant percentage throughout the historical period, external measures like the increase of minimum wages on several countries or the exponential increase of some of the raw materials could result on substantial changes on Heineken N.V.´ costs.

The last sensitivity analysis (excluding Monte Carlo simulation) shows how the price target reacts to changes on perpetuity of both D&A and CaPex%. This is being tested, since future technological changes might influence in a very considerable way the cost structure of the company, at the same time as it capex percentage.

		D&A% of TV						
	91,55	2,5%	3,5%	4,5%	5,5%	8,5%	11,5%	14,5%
CapEx% on TV	0,0%	99,52	99,64	99,76	99,88	100,24	100,60	100,95
	3,1%	95,90	96,02	96,14	96,26	96,62	96,98	97,34
	5,1%	93,55	93,67	93,79	93,91	94,27	94,62	94,98
	7,1%	91,20	91,32	91,44	91,55	91,91	92,27	92,63
	10,1%	87,67	87,79	87,90	88,02	88,38	88,74	89,10
	13,1%	84,14	84,25	84,37	84,49	84,85	85,21	85,57
	16,1%	80,60	80,72	80,84	80,96	81,32	81,68	82,04

As it can be seen, changes on D&A% for perpetuity will barely not influence the price target, and changes on CaPex% might influence but there are required huge increases the item´s %.

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